

CONTAINS NO CBI



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EPA-OTS



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OTS CONTROL OFFICE

90-890000-328

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Comprehensive Assessment Information Rule  
REPORTING FORM

When completed, send this form to:

Document Processing Center  
Office of Toxic Substances, TS-790  
U.S. Environmental Protection Agency  
401 M Street, SW  
Washington, DC 20460  
Attention: CAIR Reporting Office

For Agency Use Only:

Date of Receipt: \_\_\_\_\_

Document  
Control Number: \_\_\_\_\_

Docket Number: \_\_\_\_\_

SECTION 1 GENERAL MANUFACTURER, IMPORTER, AND PROCESSOR INFORMATION

PART A GENERAL REPORTING INFORMATION

1.01 This Comprehensive Assessment Information Rule (CAIR) Reporting Form has been

CBI completed in response to the Federal Register Notice of..... [1][2] [2][2] [8][8]  
mo. day year

☐ a. If a Chemical Abstracts Service Number (CAS No.) is provided in the Federal Register, list the CAS No. .... [0][2][6][4][7][7]-[6][2]-[5]

b. If a chemical substance CAS No. is not provided in the Federal Register, list either (i) the chemical name, (ii) the mixture name, or (iii) the trade name of the chemical substance as provided in the Federal Register.

(i) Chemical name as listed in the rule ..... N/A

(ii) Name of mixture as listed in the rule .... N/A

(iii) Trade name as listed in the rule ..... N/A

c. If a chemical category is provided in the Federal Register, report the name of the category as listed in the rule, the chemical substance CAS No. you are reporting on which falls under the listed category, and the chemical name of the substance you are reporting on which falls under the listed category.

Name of category as listed in the rule ..... N/A

CAS No. of chemical substance ..... [ ][ ][ ][ ][ ][ ]-[ ][ ]-[ ]

Name of chemical substance ..... N/A

1.02 Identify your reporting status under CAIR by circling the appropriate response(s).

CBI Manufacturer ..... 1

☐ Importer ..... 2

Processor ..... 3

X/P manufacturer reporting for customer who is a processor ..... 4

X/P processor reporting for customer who is a processor ..... 5

☐ Mark (X) this box if you attach a continuation sheet.

1.03 Does the substance you are reporting on have an "x/p" designation associated with it in the above-listed Federal Register Notice?

CBI

☐ Yes ..... ☒ Go to question 1.04

☐ No ..... ☐ Go to question 1.05

1.04 a. Do you manufacture, import, or process the listed substance and distribute it under a trade name(s) different than that listed in the Federal Register Notice? Circle the appropriate response.

CBI

☐ Yes ..... ①

☐ No ..... 2

b. Check the appropriate box below:

☐ You have chosen to notify your customers of their reporting obligations

Provide the trade name(s) ....

☐ You have chosen to report for your customers

☐ You have submitted the trade name(s) to EPA one day after the effective date of the rule in the Federal Register Notice under which you are reporting.

1.05 If you buy a trade name product and are reporting because you were notified of your reporting requirements by your trade name supplier, provide that trade name.

CBI

☐ Trade name ..... CONAP EN-2 part A, CONAPEN-5 part A

☐ Is the trade name product a mixture? CONAP EN-7 part A, SOLITHANE 113 Circle the appropriate response.

Yes ..... ①

No ..... 2

1.06 Certification -- The person who is responsible for the completion of this form must sign the certification statement below:

CBI

☐ "I hereby certify that, to the best of my knowledge and belief, all information entered on this form is complete and accurate."

Gordon J. Cizek GORDON J. CIZEK 6-28-89  
NAME SIGNATURE DATE SIGNED

PRESIDENT (213) 532-9341  
TITLE TELEPHONE NO.

☐ Mark (X) this box if you attach a continuation sheet.

- 1.07 Exemptions From Reporting -- If you have provided EPA or another Federal agency with the required information on a CAIR Reporting Form for the listed substance within the past 3 years, and this information is current, accurate, and complete for the time period specified in the rule, then sign the certification below. You CBI ☐ are required to complete section 1 of this CAIR form and provide any information now required but not previously submitted. Provide a copy of any previous submissions along with your Section 1 submission.

"I hereby certify that, to the best of my knowledge and belief, all required information which I have not included in this CAIR Reporting Form has been submitted to EPA within the past 3 years and is current, accurate, and complete for the time period specified in the rule."

<u>N/A</u>		
NAME	SIGNATURE	DATE SIGNED
	( )	
TITLE	TELEPHONE NO.	DATE OF PREVIOUS SUBMISSION

- 1.08 CBI Certification -- If you have asserted any CBI claims in this report you must certify that the following statements truthfully and accurately apply to all of those confidentiality claims which you have asserted.

CBI ☐ "My company has taken measures to protect the confidentiality of the information, and it will continue to take these measures; the information is not, and has not been, reasonably ascertainable by other persons (other than government bodies) by using legitimate means (other than discovery based on a showing of special need in a judicial or quasi-judicial proceeding) without my company's consent; the information is not publicly available elsewhere; and disclosure of the information would cause substantial harm to my company's competitive position."

<u>N/A</u>		
NAME	SIGNATURE	DATE SIGNED
	( )	
TITLE	TELEPHONE NO.	

☐ Mark (X) this box if you attach a continuation sheet.

## 1.09 Facility Identification

Ablestik

Address [8][3][3] [W][E][S][T] [1][8][2][n][d] [S][T][R][E][E][T] [ ] [ ] [ ]

Street

City

[C][A]      [9][0][2][4][8]--[ ][ ][ ][ ]  
State                      Zip

State

Zir

Other SIC Code .....[N][I][A]

[illegible]

Street

City

           --

State                      Zip

State

Zir

Employer ID Number .....( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )

6

1.11 Parent Company Identification

CBI Name [N][A][T][I][O][N][A][L][ ] [S][T][A][R][C][H][ ] [4][ ] [C][H][E][M][I][C][A][L][ ]  
[ ] Address [1][0][ ] [F][I][N][D][E][R][N][E][ ] [A][V][E][N][U][E][ ] [ ] [ ] [ ] [ ] [ ]  
Street  
[B][R][I][D][G][E][W][A][T][E][R][ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]  
City  
[N][J][ ] [0][8][8][0][7][ ]--[ ] [ ] [ ] [ ]  
State Zip  
Dun & Bradstreet Number ..... [0][0][ ]-[1][5][1][ ]-[9][2][3][0][ ]

1.12 Technical Contact

CBI Name [S][T][E][L][L][A][ ] [F][ ] [J][O][U][ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]  
[ ] Title [S][A][F][E][T][Y][ ] [P][R][O][D][U][C][T][ ] [A][S][S][U][R][A][N][C][E][ ] [ ] [ ]  
Address [8][3][3][ ] [W][E][S][T][ ] [1][8][2][N][D][ ] [S][T][R][E][E][T][ ] [ ] [ ] [ ]  
Street  
[G][A][R][D][E][N][A][ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]  
City  
[C][A][ ] [9][0][2][4][8][ ]--[ ] [ ] [ ] [ ]  
State Zip  
Telephone Number ..... [2][7][3][ ]-[5][3][2][ ]-[7][3][4][7][ ]

1.13 This reporting year is from ..... [0][7][ ] [8][8][ ] to [7][2][ ] [8][8][ ]  
Mo. Year Mo. Year

[ ] Mark (X) this box if you attach a continuation sheet.

1.14 Facility Acquired -- If you purchased this facility during the reporting year, provide the following information about the seller:

CBI    Name of Seller [N][I][A] [ ]

[illegible]

Street

[illegible]

City

[illegible]

State

$$\overline{ZiD}$$

Employer ID Number ..... [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

Date of Sale ..... [ ] [ ] [ ] [ ] [ ] [ ]

Mo.

Dav

Year

Contact Person [ ]

Telephone Number .....[ ][ ]-[ ][ ]-[ ][ ]

1.15 Facility Sold -- If you sold this facility during the reporting year, provide the following information about the buyer:

CBI    Name of Buyer   [N]/A \_\_\_\_\_

[illegible]

Street

[illegible]

City

[ ] [ ]      [ ] [ ] [ ] [ ] [ ] [ ] -- [ ] [ ] [ ] [ ]

State

Zip

Employer ID Number .....[ ][ ][ ][ ][ ][ ][ ][ ]

Date of Purchase ..... [ ] [ ] [ ] [ ] [ ] [ ]

Mo.

Da v

Year

[illegible]

Telephone Number .....[ ] [ ] [ ] - [ ] [ ] [ ] - [ ] [ ] [ ] [ ]

☐ Mark (X) this box if you attach a continuation sheet.

1.16 For each classification listed below, state the quantity of the listed substance that was manufactured, imported, or processed at your facility during the reporting year.

CBI

☐ Classification Quantity (kg/yr)

Manufactured ..... N/A

Imported ..... N/A

Processed (include quantity repackaged) ..... 21.0 kg

Of that quantity manufactured or imported, report that quantity:

In storage at the beginning of the reporting year ..... N/A

For on-site use or processing ..... N/A

For direct commercial distribution (including export) ..... N/A

In storage at the end of the reporting year ..... N/A

Of that quantity processed, report that quantity:

In storage at the beginning of the reporting year ..... 12.1 kg

Processed as a reactant (chemical producer) ..... 0

Processed as a formulation component (mixture producer) ..... N/A

Processed as an article component (article producer) ..... N/A

Repackaged (including export) ..... N/A

In storage at the end of the reporting year ..... 13 kg

☐ Mark (X) this box if you attach a continuation sheet.



1.17 Mixture -- If the listed substance on which you are required to report is a mixture or a component of a mixture, provide the following information for each component chemical. (If the mixture composition is variable, report an average percentage of each component chemical for all formulations.)

[ ]

Component Name	Supplier Name	Average % Composition by Weight (specify precision, e.g., 45% ± 0.5%)
N/A		
Total		100%

10

2.04 State the quantity of the listed substance that your facility manufactured, imported, or processed during the 3 corporate fiscal years preceding the reporting year in descending order.

CBI

☐ Year ending ..... [7][2] [8][7]  
Mo. Year

Quantity manufactured ..... 0 kg

Quantity imported ..... 0 kg

Quantity processed ..... 27.3 kg

Year ending ..... [7][2] [8][6]  
Mo. Year

Quantity manufactured ..... 0 kg

Quantity imported ..... 0 kg

Quantity processed ..... 16.0 kg

Year ending ..... [7][2] [8][5]  
Mo. Year

Quantity manufactured ..... 0 kg

Quantity imported ..... 0 kg

Quantity processed ..... 37.22 kg

2.05 Specify the manner in which you manufactured the listed substance. Circle all appropriate process types.

CBI

☐ ..... N/A ..... 1  
Continuous process ..... 1  
Semicontinuous process ..... 2  
Batch process ..... 3

☐ Mark (X) this box if you attach a continuation sheet.

2.06 Specify the manner in which you processed the listed substance. Circle all appropriate process types.

- ☐ Continuous process ..... 1
- ☐ Semicontinuous process ..... 2
- ☐ Batch process ..... 3

2.07 State your facility's name-plate capacity for manufacturing or processing the listed substance. (If you are a batch manufacturer or batch processor, do not answer this question.)

- ☐ Manufacturing capacity ..... N/A kg/yr
- ☐ Processing capacity ..... \_\_\_\_\_ kg/yr

2.08 If you intend to increase or decrease the quantity of the listed substance manufactured, imported, or processed at any time after your current corporate fiscal year, estimate the increase or decrease based upon the reporting year's production volume.

<input type="checkbox"/>	Manufacturing Quantity (kg)	Importing Quantity (kg)	Processing Quantity (kg)
Amount of increase	_____	_____	<u>N/A</u>
Amount of decrease	_____	_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

2.09 For the three largest volume manufacturing or processing process types involving the listed substance, specify the number of days you manufactured or processed the listed substance during the reporting year. Also specify the average number of hours per day each process type was operated. (If only one or two operations are involved, list those.)

CBI

☐

Days/Year      Average  
Hours/Day

Process Type #1 (The process type involving the largest quantity of the listed substance.)

Manufactured ..... 0      0

*Solifthane 113* Processed ..... 52      4

Process Type #2 (The process type involving the 2nd largest quantity of the listed substance.)

Manufactured ..... 0      0

*ConapEN 5* Processed ..... 13      4

Process Type #3 (The process type involving the 3rd largest quantity of the listed substance.)

Manufactured ..... -      -

Processed ..... -      -

2.10 State the maximum daily inventory and average monthly inventory of the listed substance that was stored on-site during the reporting year in the form of a bulk chemical.

CBI

☐

Maximum daily inventory ..... kg

Average monthly inventory ..... kg

*Leave blank  
Do not put  
N/A*

☐ Mark (X) this box if you attach a continuation sheet.

2.11 Related Product Types -- List any byproducts, coproducts, or impurities present with the listed substance in concentrations greater than 0.1 percent as it is manufactured, imported, or processed. The source of byproducts, coproducts, or impurities means the source from which the byproducts, coproducts, or impurities are made or introduced into the product (e.g., carryover from raw material, reaction product, etc.).

CBI

☐

<u>CAS No.</u>	<u>Chemical Name</u>	<u>Byproduct, Coproduct or Impurity<sup>1</sup></u>	<u>Concentration (%) (specify <math>\pm</math> % precision)</u>	<u>Source of By-products, Coproducts, or Impurities</u>
<u>UK</u>				

<sup>1</sup>Use the following codes to designate byproduct, coproduct, or impurity:

B = Byproduct  
C = Coproduct  
I = Impurity

☐ Mark (X) this box if you attach a continuation sheet.

- 2.12 Existing Product Types -- List all existing product types which you manufactured, imported, or processed using the listed substance during the reporting year. List the quantity of listed substance you use for each product type as a percentage of the total volume of listed substance used during the reporting year. Also list the quantity of listed substance used captively on-site as a percentage of the value listed under column b., and the types of end-users for each product type. (Refer to the instructions for further explanation and an example.)

CBI

☐

a.	b.	c.	d.
Product Types <sup>1</sup>	% of Quantity Manufactured, Imported, or Processed	% of Quantity Used Captively On-Site	Type of End-Users <sup>2</sup>
B	100	0	I, CM

<sup>1</sup>Use the following codes to designate product types:

A = Solvent	L = Moldable/Castable/Rubber and additives
B = Synthetic reactant ✓	M = Plasticizer
C = Catalyst/Initiator/Accelerator/ Sensitizer	N = Dye/Pigment/Colorant/Ink and additives
D = Inhibitor/Stabilizer/Scavenger/ Antioxidant	O = Photographic/Reprographic chemical and additives
E = Analytical reagent	P = Electrodeposition/Plating chemicals
F = Chelator/Coagulant/Sequestrant	Q = Fuel and fuel additives
G = Cleanser/Detergent/Degreaser	R = Explosive chemicals and additives
H = Lubricant/Friction modifier/Antiwear agent	S = Fragrance/Flavor chemicals
I = Surfactant/Emulsifier	T = Pollution control chemicals
J = Flame retardant	U = Functional fluids and additives
K = Coating/Binder/Adhesive and additives	V = Metal alloy and additives
	W = Rheological modifier
	X = Other (specify) _____

<sup>2</sup>Use the following codes to designate the type of end-users:

I = Industrial	CS = Consumer
CM = Commercial	H = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

- 2.13 Expected Product Types -- Identify all product types which you expect to manufacture, import, or process using the listed substance at any time after your current corporate fiscal year. For each use, specify the quantity you expect to manufacture, import, or process for each use as a percentage of the total volume of listed substance used during the reporting year. Also list the quantity of listed substance used captively on-site as a percentage of the value listed under column b., and the types of end-users for each product type. (Refer to the instructions for further explanation and an example.)

CBI

☐

a.	b.	c.	d.
Product Types <sup>1</sup>	% of Quantity Manufactured, Imported, or Processed	% of Quantity Used Captively On-Site	Type of End-Users <sup>2</sup>
N/A			

<sup>1</sup>Use the following codes to designate product types:

A = Solvent	L = Moldable/Castable/Rubber and additives
B = Synthetic reactant	M = Plasticizer
C = Catalyst/Initiator/Accelerator/ Sensitizer	N = Dye/Pigment/Colorant/Ink and additives
D = Inhibitor/Stabilizer/Scavenger/ Antioxidant	O = Photographic/Reprographic chemical and additives
E = Analytical reagent	P = Electrodeposition/Plating chemicals
F = Chelator/Coagulant/Sequestrant	Q = Fuel and fuel additives
G = Cleanser/Detergent/Degreaser	R = Explosive chemicals and additives
H = Lubricant/Friction modifier/Antiwear agent	S = Fragrance/Flavor chemicals
I = Surfactant/Emulsifier	T = Pollution control chemicals
J = Flame retardant	U = Functional fluids and additives
K = Coating/Binder/Adhesive and additives	V = Metal alloy and additives
	W = Rheological modifier
	X = Other (specify) _____

<sup>2</sup>Use the following codes to designate the type of end-users:

I = Industrial	CS = Consumer
CM = Commercial	H = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

2.14 Final Product -- Complete the following table for each type of final product manufactured, imported, or processed at your facility that contains the listed substance other than as an impurity.

☐

a.	b.	c.	d.
Product Type <sup>1</sup>	Final Product's Physical Form <sup>2</sup>	Average % Composition of Listed Substance in Final Product	Type of End-Users <sup>3</sup>
B	B, D	100	I

<sup>1</sup>Use the following codes to designate product types:

A = Solvent	L = Moldable/Castable/Rubber and additives
B = Synthetic reactant	M = Plasticizer
C = Catalyst/Initiator/Accelerator/Sensitizer	N = Dye/Pigment/Colorant/Ink and additives
D = Inhibitor/Stabilizer/Scavenger/Antioxidant	O = Photographic/Reprographic chemical and additives
E = Analytical reagent	P = Electrodeposition/Plating chemicals
F = Chelator/Coagulant/Sequestrant	Q = Fuel and fuel additives
G = Cleanser/Detergent/Degreaser	R = Explosive chemicals and additives
H = Lubricant/Friction modifier/Antiwear agent	S = Fragrance/Flavor chemicals
I = Surfactant/Emulsifier	T = Pollution control chemicals
J = Flame retardant	U = Functional fluids and additives
K = Coating/Binder/Adhesive and additives	V = Metal alloy and additives
	W = Rheological modifier
	X = Other (specify) _____

<sup>2</sup>Use the following codes to designate the final product's physical form:

A = Gas	F2 = Crystalline solid
B = Liquid	F3 = Granules
C = Aqueous solution	F4 = Other solid
D = Paste	G = Gel
E = Slurry	H = Other (specify) _____
F1 = Powder	

<sup>3</sup>Use the following codes to designate the type of end-users:

I = Industrial	CS = Consumer
CM = Commercial	H = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.



2.15 Circle all applicable modes of transportation used to deliver bulk shipments of the CBI listed substance to off-site customers.

☐ Truck ..... ①  
Railcar ..... 2  
Barge, Vessel ..... 3  
Pipeline ..... 4  
Plane ..... ⑤  
Other (specify) \_\_\_\_\_ 6

2.16 Customer Use -- Estimate the quantity of the listed substance used by your customers or prepared by your customers during the reporting year for use under each category of end use listed (i-iv).  
CBI

☐

Category of End Use

i. Industrial Products

Chemical or mixture ..... 0 kg/yr  
Article ..... 14.1 kg/yr

ii. Commercial Products

Chemical or mixture ..... 0 kg/yr  
Article ..... 0 kg/yr

iii. Consumer Products

Chemical or mixture ..... 0 kg/yr  
Article ..... 0 kg/yr

iv. Other

Distribution (excluding export) ..... 0 kg/yr  
Export ..... 0.3 kg/yr  
Quantity of substance consumed as reactant ..... 0 kg/yr  
Unknown customer uses ..... 0 kg/yr

☐ Mark (X) this box if you attach a continuation sheet.

### SECTION 3 PROCESSOR RAW MATERIAL IDENTIFICATION

#### PART A GENERAL DATA

- 3.01 Specify the quantity purchased and the average price paid for the listed substance for each major source of supply listed. Product trades are treated as purchases.  
CBI The average price is the market value of the product that was traded for the listed substance.

☐

<u>Source of Supply</u>	<u>Quantity (kg)</u>	<u>Average Price (\$/kg)</u>
The listed substance was manufactured on-site.	0	0
The listed substance was transferred from a different company site.	0	0
The listed substance was purchased directly from a manufacturer or importer.	0	0
The listed substance was purchased from a distributor or repackager.	<i>Conap EN-2 part A 4.14</i> <i>Conap EN-5 part A 8.87</i> <i>Conap EN-7 part A 1.13</i> <i>Solthane 113 8.6</i>	<i>1.89</i> <i>2.32</i> <i>3.90</i> <i>1.25</i>
The listed substance was purchased from a mixture producer.	0	0

- 3.02 Circle all applicable modes of transportation used to deliver the listed substance to your facility.

☐

- Truck ..... ①
- Railcar ..... 2
- Barge, Vessel ..... 3
- Pipeline ..... 4
- Plane ..... ⑤
- Other (specify) \_\_\_\_\_ 6

☐ Mark (X) this box if you attach a continuation sheet.

3.03 a. Circle all applicable containers used to transport the listed substance to your facility.

CBI

☐

Bags ..... 1  
Boxes ..... 2  
Free standing tank cylinders ..... 3  
Tank rail cars ..... 4  
Hopper cars ..... 5  
Tank trucks ..... 6  
Hopper trucks ..... 7  
Drums ..... 8  
Pipeline ..... 9  
Other (specify) metal pails & cans ..... 10

b. If the listed substance is transported in pressurized tank cylinders, tank rail cars, or tank trucks, state the pressure of the tanks.

Tank cylinders ..... N/A mmHg  
Tank rail cars ..... mmHg  
Tank trucks ..... mmHg

☐ Mark (X) this box if you attach a continuation sheet.

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PART B RAW MATERIAL IN THE FORM OF A MIXTURE

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3.04 If you obtain the listed substance in the form of a mixture, list the trade name(s) of the mixture, the name of its supplier(s) or manufacturer(s), an estimate of the average percent composition by weight of the listed substance in the mixture, and the amount of mixture processed during the reporting year.

CBI

☐

<u>Trade Name</u>	<u>Supplier or Manufacturer</u>	<u>Average % Composition by Weight (specify <math>\pm</math> % precision)</u>	<u>Amount Processed (kg/yr)</u>
<u>N/A</u>			

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☐ Mark (X) this box if you attach a continuation sheet.

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PART C RAW MATERIAL VOLUME

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3.05 State the quantity of the listed substance used as a raw material during the reporting year in the form of a class I chemical, class II chemical, or polymer, and the percent composition, by weight, of the listed substance.

☐

	Quantity Used (kg/yr)	% Composition by Weight of Listed Sub- stance in Raw Material (specify $\pm$ % precision)
Class I chemical	<hr/>	<hr/>
	<hr/>	<hr/>
	<hr/>	<hr/>
Class II chemical	<hr/>	<hr/>
	<hr/>	<hr/>
	<hr/>	<hr/>
Polymer	Conap EN-2 part A	10 %
	Conap EN-5 part A	13 %
	Conap EN-7 part A	13 %
	Solothane 113	7 %

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☐ Mark (X) this box if you attach a continuation sheet.

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## SECTION 4 PHYSICAL/CHEMICAL PROPERTIES

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### General Instructions:

If you are reporting on a mixture as defined in the glossary, reply to questions in Section 4 that are inappropriate to mixtures by stating "NA -- mixture."

For questions 4.06-4.15, if you possess any hazard warning statement, label, MSDS, or other notice that addresses the information requested, you may submit a copy or reasonable facsimile in lieu of answering those questions which it addresses.

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### PART A PHYSICAL/CHEMICAL DATA SUMMARY

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- 4.01 Specify the percent purity for the three major<sup>1</sup> technical grade(s) of the listed substance as it is manufactured, imported, or processed. Measure the purity of the substance in the final product form for manufacturing activities, at the time you import the substance, or at the point you begin to process the substance.

☐

	<u>Manufacture</u>	<u>Import</u>	<u>Process</u>
Technical grade #1	- % purity	- % purity	10 % purity
Technical grade #2	- % purity	- % purity	13 % purity
Technical grade #3	- % purity	- % purity	7 % purity

<sup>1</sup>Major = Greatest quantity of listed substance manufactured, imported or processed.

- 4.02 Submit your most recently updated Material Safety Data Sheet (MSDS) for the listed substance, and for every formulation containing the listed substance. If you possess an MSDS that you developed and an MSDS developed by a different source, submit your version. Indicate whether at least one MSDS has been submitted by circling the appropriate response.

Yes ..... (1)

No ..... 2

Indicate whether the MSDS was developed by your company or by a different source.

Your company ..... (1)

Another source ..... (2)

---

☐ Mark (X) this box if you attach a continuation sheet.

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4.03 Submit a copy or reasonable facsimile of any hazard information (other than an MSDS) <sup>Technical Data sheet</sup> that is provided to your customers/users regarding the listed substance or any formulation containing the listed substance. Indicate whether this information has been submitted by circling the appropriate response.

Yes ..... (1)

No ..... 2

4.04 For each activity that uses the listed substance, circle all the applicable number(s) corresponding to each physical state of the listed substance during the activity listed. Physical states for importing and processing activities are determined at the time you import or begin to process the listed substance. Physical states for manufacturing, storage, disposal and transport activities are determined using the final state of the product.

CBI

[ ]

Activity	Physical State				
	Solid	Slurry	Liquid	Liquified Gas	Gas
Manufacture	1	2	3	4	5
Import	1	2	3	4	5
Process	1	2	(3)	4	5
Store	(1)	2	(3)	4	5
Dispose	(1)	2	(3)	4	5
Transport	(1)	2	3	4	5

[ ] Mark (X) this box if you attach a continuation sheet.

- 4.05 Particle Size -- If the listed substance exists in particulate form during any of the following activities, indicate for each applicable physical state the size and the percentage distribution of the listed substance by activity. Do not include particles  $\geq 10$  microns in diameter. Measure the physical state and particle sizes for importing and processing activities at the time you import or begin to process the listed substance. Measure the physical state and particle sizes for manufacturing storage, disposal and transport activities using the final state of the product.

CBI  
☐

<u>Physical State</u>		<u>Manufacture</u>	<u>Import</u>	<u>Process</u>	<u>Store</u>	<u>Dispose</u>	<u>Transport</u>
Dust	<1 micron	<u>N/A</u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
	1 to <5 microns	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
	5 to <10 microns	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
Powder	<1 micron	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
	1 to <5 microns	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
	5 to <10 microns	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
Fiber	<1 micron	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
	1 to <5 microns	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
	5 to <10 microns	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
Aerosol	<1 micron	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
	1 to <5 microns	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
	5 to <10 microns	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>

☐ Mark (X) this box if you attach a continuation sheet.



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SECTION 5 ENVIRONMENTAL FATE

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PART A RATE CONSTANTS AND TRANSFORMATION PRODUCTS

---

5.01 Indicate the rate constants for the following transformation processes.

a. Photolysis:

Absorption spectrum coefficient (peak) .... UK (1/M cm) at \_\_\_\_\_ nm  
Reaction quantum yield,  $\phi$  ..... UK at \_\_\_\_\_ nm  
Direct photolysis rate constant,  $k_p$ , at ... UK 1/hr \_\_\_\_\_ latitude

b. Oxidation constants at 25°C:

For  $^1O_2$  (singlet oxygen),  $k_{ox}$  ..... UK 1/M hr  
For  $RO_2$  (peroxy radical),  $k_{ox}$  ..... UK 1/M hr

c. Five-day biochemical oxygen demand,  $BOD_5$  ... UK mg/l

d. Biotransformation rate constant:

For bacterial transformation in water,  $k_b$  ... UK 1/hr  
Specify culture ..... UK

e. Hydrolysis rate constants:

For base-promoted process,  $k_B$  ..... UK 1/M hr  
For acid-promoted process,  $k_A$  ..... UK 1/M hr  
For neutral process,  $k_N$  ..... UK 1/hr

f. Chemical reduction rate (specify conditions) UK

g. Other (such as spontaneous degradation) ... UK

---

☐ Mark (X) this box if you attach a continuation sheet.

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PART B PARTITION COEFFICIENTS

5.02 a. Specify the half-life of the listed substance in the following media.

<u>Media</u>	<u>Half-life (specify units)</u>
Groundwater	<u>uk</u>
Atmosphere	<u>uk</u>
Surface water	<u>uk</u>
Soil	<u>uk</u>

b. Identify the listed substance's known transformation products that have a half-life greater than 24 hours.

<u>CAS No.</u>	<u>Name</u>	<u>Half-life (specify units)</u>	<u>Media</u>
<u>uk</u>			in
<u>uk</u>			in
<u>uk</u>			in
<u>uk</u>			in

5.03 Specify the octanol-water partition coefficient,  $K_{ow}$  ... uk at 25°C  
 Method of calculation or determination ..... uk

5.04 Specify the soil-water partition coefficient,  $K_d$  ..... uk at 25°C  
 Soil type ..... uk

5.05 Specify the organic carbon-water partition coefficient,  $K_{oc}$  ..... uk at 25°C

5.06 Specify the Henry's Law Constant,  $H$  ..... uk atm-m<sup>3</sup>/mole

☐ Mark (X) this box if you attach a continuation sheet.

5.07 List the bioconcentration factor (BCF) of the listed substance, the species for which it was determined, and the type of test used in deriving the BCF.

### Bioconcentration Factor

Species

Test<sup>1</sup>

UK

UK

ук

<sup>1</sup>Use the following codes to designate the type of test:

F = Flowthrough

S = Static

☐ Mark (X) this box if you attach a continuation sheet.

6.04 For each market listed below, state the quantity sold and the total sales value of  
CBI the listed substance sold or transferred in bulk during the reporting year.

☐

<u>Market</u>	<u>Quantity Sold or Transferred (kg/yr)</u>	<u>Total Sales Value (\$/yr)</u>
Retail sales		
Distribution -- Wholesalers		
Distribution -- Retailers		
Intra-company transfer		
Repackagers		
Mixture producers		
Article producers		
Other chemical manufacturers or processors		
Exporters		
Other (specify)		

6.05 Substitutes -- List all known commercially feasible substitutes that you know exist  
for the listed substance and state the cost of each substitute. A commercially  
feasible substitute is one which is economically and technologically feasible to use  
CBI in your current operation, and which results in a final product with comparable  
performance in its end uses.

☐

<u>Substitute</u>	<u>Cost (\$/kg)</u>
UK	

☐ Mark (X) this box if you attach a continuation sheet.

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SECTION 7 MANUFACTURING AND PROCESSING INFORMATION

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General Instructions:

For questions 7.04-7.06, provide a separate response for each process block flow diagram provided in questions 7.01, 7.02, and 7.03. Identify the process type from which the information is extracted.

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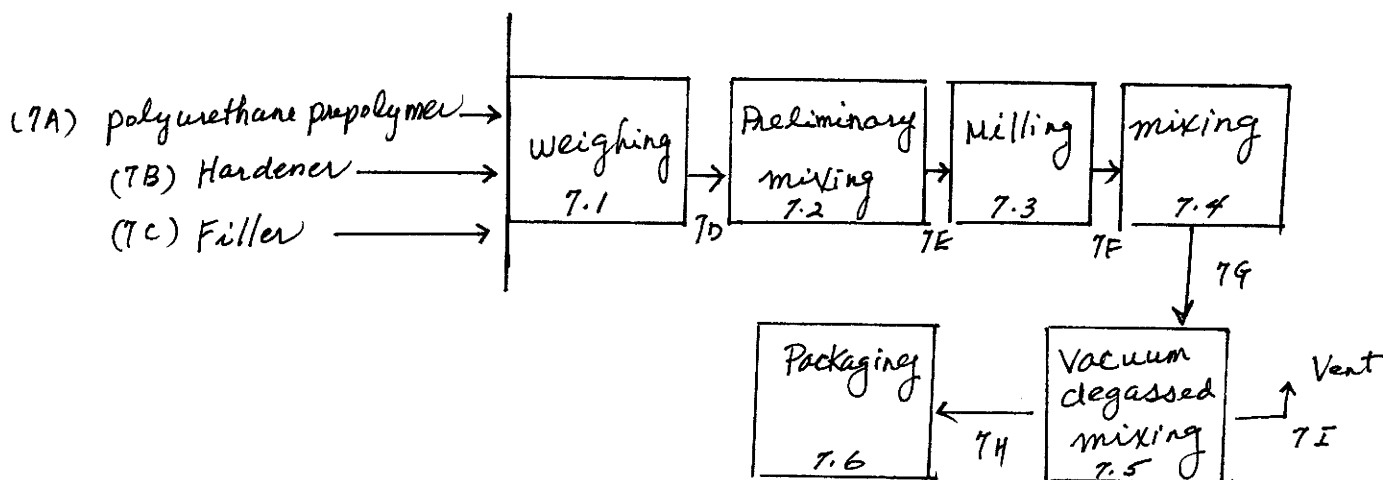
PART A MANUFACTURING AND PROCESSING PROCESS TYPE DESCRIPTION

---

7.01 In accordance with the instructions, provide a process block flow diagram showing the major (greatest volume) process type involving the listed substance.

CBI

☐ Process type ..... Polyurethane Prepolymer mixing process



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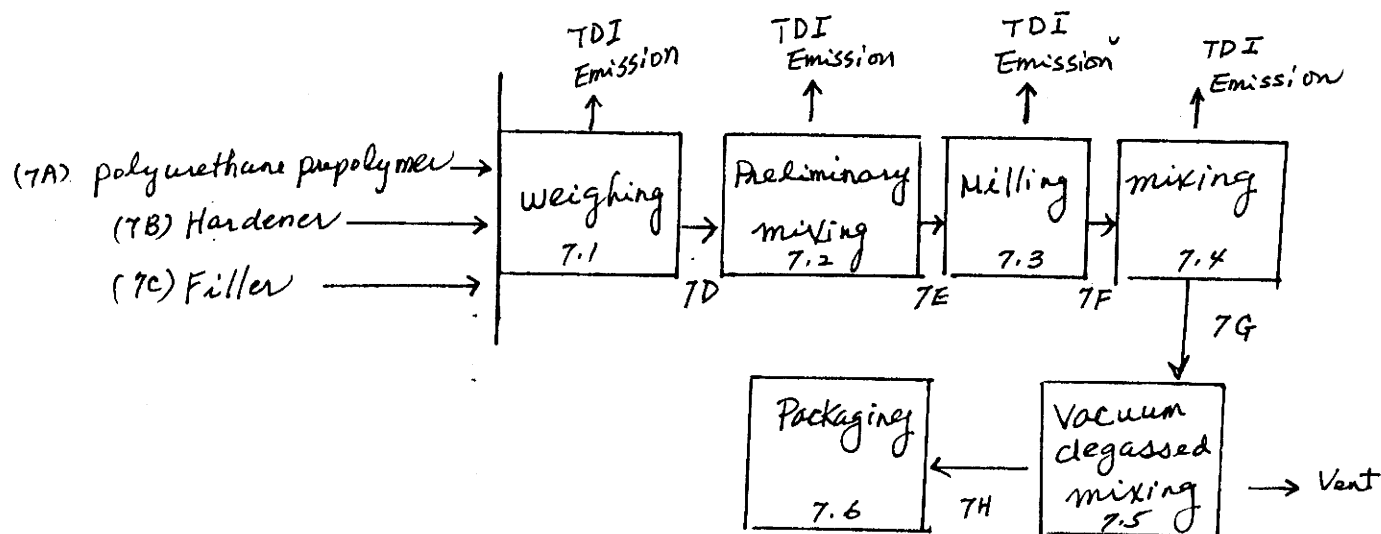
☐ Mark (X) this box if you attach a continuation sheet.

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7.03 In accordance with the instructions, provide a process block flow diagram showing all process emission streams and emission points that contain the listed substance and which, if combined, would total at least 90 percent of all facility emissions if not treated before emission into the environment. If all such emissions are released from one process type, provide a process block flow diagram using the instructions for question 7.01. If all such emissions are released from more than one process type, provide a process block flow diagram showing each process type as a separate block.

CBI

☐ Process type ..... Polyurethane Prepolymer mixing process



☐ Mark (X) this box if you attach a continuation sheet.

7.04 Describe the typical equipment types for each unit operation identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

☐ Process type ..... Polyurethane Prepolymer mixing process

Unit Operation ID Number	Typical Equipment Type	Operating Temperature Range (°C)	Operating Pressure Range (mm Hg)	Vessel Composition
<u>7.1</u>	<u>Balance</u>	<u>25°</u>	<u>760</u>	<u>stainless steel</u>
<u>7.2</u>	<u>spatula</u>	<u>25°</u>	<u>760</u>	<u>stainless steel</u>
<u>7.3</u>	<u>Jiffy / Hobart</u>	<u>25°</u>	<u>760</u>	<u>stainless steel</u>
<u>7.4</u>	<u>spatula</u>	<u>25°</u>	<u>760</u>	<u>stainless steel</u>
<u>7.5</u>	<u>Vacuum</u>	<u>25°</u>	<u>760</u>	<u>stainless steel</u>
<u>7.6</u>	<u>Filling equipment</u>	<u>25°</u>	<u>760</u>	<u>stainless steel</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

7.05 Describe each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

☐ Process type ..... Polyurethane Prepolymer Mixing Process

Process Stream ID Code	Process Stream Description	Physical State <sup>1</sup>	Stream Flow (kg/yr)
<u>A</u>	<u>Polyurethane Prepolymer containing TDI</u>	<u>OL</u>	<u>23</u>
<u>B</u>	<u>Polyurethane Hardener</u>	<u>OL</u>	<u>12.34</u>
<u>C</u>	<u>Fillers</u>	<u>SO</u>	<u>1.2</u>

<sup>1</sup>Use the following codes to designate the physical state for each process stream:

GC = Gas (condensable at ambient temperature and pressure)  
 GU = Gas (uncondensable at ambient temperature and pressure)  
 SO = Solid  
 SY = Sludge or slurry  
 AL = Aqueous liquid  
 OL = Organic liquid  
 IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

☐ Mark (X) this box if you attach a continuation sheet.



7.06 Characterize each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the CBI instructions for further explanation and an example.)

☐ Process type .....

a.	b.	c.	d.	e.
Process Stream ID Code	Known Compounds <sup>1</sup>	Concentrations <sup>2,3</sup> (% or ppm)	Other Expected Compounds	Estimated Concentrations (% or ppm)
B	Polyurethane Hardener	100%	NA	NA
A	TDI prepolymer	≤ 13% TDI	prepolymer	≥ 87%
C	Filler	100%	NA	NA

7.06 continued below

☐ Mark (X) this box if you attach a continuation sheet.

7.06 (continued)

<sup>1</sup>For each additive package introduced into a process stream, specify the compounds that are present in each additive package, and the concentration of each component. Assign an additive package number to each additive package and list this number in column b. (Refer to the instructions for further explanation and an example. Refer to the glossary for the definition of additive package.)

Additive Package Number	Components of Additive Package	Concentrations (% or ppm)
<u>1</u>	<u>NA</u>	
<u>2</u>		
<u>3</u>		
<u>4</u>		
<u>5</u>		

<sup>2</sup>Use the following codes to designate how the concentration was determined:

A = Analytical result  
E = Engineering judgement/calculation

<sup>3</sup>Use the following codes to designate how the concentration was measured:

V = Volume  
W = Weight

☐ Mark (X) this box if you attach a continuation sheet.

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PART A RESIDUAL TREATMENT PROCESS DESCRIPTION

---

8.01 In accordance with the instructions, provide a residual treatment block flow diagram which describes the treatment process used for residuals identified in question 7.01.

CBI

☐ Process type ..... NA

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☐ Mark (X) this box if you attach a continuation sheet.

---

## PART B RESIDUAL GENERATION AND CHARACTERIZATION

8.05 Characterize each process stream identified in your residual treatment block flow diagram(s). If a residual treatment block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the instructions for further explanation and an example.)

[ ] Process type .....

[illegible]

8.05 continued below

☐ Mark (X) this box if you attach a continuation sheet.

---

8.05 (continued)

<sup>1</sup>Use the following codes to designate the type of hazardous waste:

I = Ignitable  
C = Corrosive  
R = Reactive  
E = EP toxic  
T = Toxic  
H = Acutely hazardous

<sup>2</sup>Use the following codes to designate the physical state of the residual:

GC = Gas (condensable at ambient temperature and pressure)  
GU = Gas (uncondensable at ambient temperature and pressure)  
SO = Solid  
SY = Sludge or slurry  
AL = Aqueous liquid  
OL = Organic liquid  
IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

-----  
8.05 continued below

NA

---

☐ Mark (X) this box if you attach a continuation sheet.

---

8.05 (continued)

<sup>3</sup>For each additive package introduced into a process stream, specify the compounds that are present in each additive package, and the concentration of each component. Assign an additive package number to each additive package and list this number in column d. (Refer to the instructions for further explanation and an example. Refer to the glossary for the definition of additive package.)

Additive Package Number	Components of Additive Package	Concentrations (% or ppm)
<u>1</u>	<u>NA</u>	
<u>2</u>		
<u>3</u>		
<u>4</u>		
<u>5</u>		

<sup>4</sup>Use the following codes to designate how the concentration was determined:

A = Analytical result

E = Engineering judgement/calculation

8.05 continued below

☐ Mark (X) this box if you attach a continuation sheet.

---

8.05 (continued)

<sup>5</sup>Use the following codes to designate how the concentration was measured:

V = Volume

W = Weight

<sup>6</sup>Specify the analytical test methods used and their detection limits in the table below. Assign a code to each test method used and list those codes in column e.

<u>Code</u>	<u>Method</u>	<u>Detection Limit</u> <u>(± ug/l)</u>
<u>1</u>	<u>NA</u>	<u></u>
<u>2</u>	<u></u>	<u></u>
<u>3</u>	<u></u>	<u></u>
<u>4</u>	<u></u>	<u></u>
<u>5</u>	<u></u>	<u></u>
<u>6</u>	<u></u>	<u></u>

---

☐ Mark (X) this box if you attach a continuation sheet.

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CBI

[illegible]

<sup>2</sup>Use the codes provided in Exhibit 8-2 to designate the management methods

58



8.22 Describe the combustion chamber design parameters for each of the three largest (by capacity) incinerators that are used on-site to burn the residuals identified in your process block or residual treatment block flow diagram(s).

☐

Incinerator	Combustion Chamber Temperature (°C)		Location of Temperature Monitor		Residence Time In Combustion Chamber (seconds)	
	Primary	Secondary	Primary	Secondary	Primary	Secondary
1						
2						
3						

Indicate if Office of Solid Waste survey has been submitted in lieu of response by circling the appropriate response.

Yes ..... 1

No ..... 2

8.23 Complete the following table for the three largest (by capacity) incinerators that are used on-site to burn the residuals identified in your process block or residual treatment block flow diagram(s).

☐

Incinerator	Air Pollution Control Device <sup>1</sup>	Types of Emissions Data Available
1	NA	
2		
3		

Indicate if Office of Solid Waste survey has been submitted in lieu of response by circling the appropriate response.

Yes ..... 1

No ..... 2

<sup>1</sup>Use the following codes to designate the air pollution control device:

S = Scrubber (include type of scrubber in parenthesis)

E = Electrostatic precipitator

O = Other (specify) \_\_\_\_\_

☐ Mark (X) this box if you attach a continuation sheet.

PART A EMPLOYMENT AND POTENTIAL EXPOSURE PROFILE

9.01 Mark (X) the appropriate column to indicate whether your company maintains records on the following data elements for hourly and salaried workers. Specify for each data element the year in which you began maintaining records and the number of years the records for that data element are maintained. (Refer to the instructions for further explanation and an example.)

CBI

☐

Data Element	Data are Maintained for:		Year in Which Data Collection Began	Number of Years Records Are Maintained
	Hourly Workers	Salaried Workers		
Date of hire	<u>yes</u>	<u>yes</u>	<u>Date of hire for each employee</u>	<u>in accordance w/ governmental reg.</u>
Age at hire	<u>yes</u>	<u>yes</u>	<u>"</u>	<u>"</u>
Work history of individual before employment at your facility	<u>yes</u>	<u>yes</u>	<u>"</u>	<u>"</u>
Sex	<u>yes</u>	<u>yes</u>	<u>"</u>	<u>"</u>
Race	<u>yes</u>	<u>yes</u>	<u>"</u>	<u>"</u>
Job titles	<u>yes</u>	<u>yes</u>	<u>"</u>	<u>"</u>
Start date for each job title	<u>yes</u>	<u>yes</u>	<u>"</u>	<u>"</u>
End date for each job title	<u>yes</u>	<u>yes</u>	<u>"</u>	<u>"</u>
Work area industrial hygiene monitoring data	<u>yes</u>	<u>yes</u>	<u>"</u>	<u>"</u>
Personal employee monitoring data	<u>yes</u>	<u>yes</u>	<u>"</u>	<u>"</u>
Employee medical history	<u>yes</u>	<u>yes</u>	<u>"</u>	<u>"</u>
Employee smoking history	<u>yes</u>	<u>yes</u>	<u>"</u>	<u>"</u>
Accident history	<u>yes</u>	<u>yes</u>	<u>"</u>	<u>"</u>
Retirement date	<u>yes</u>	<u>yes</u>	<u>"</u>	<u>"</u>
Termination date	<u>yes</u>	<u>yes</u>	<u>"</u>	<u>"</u>
Vital status of retirees	<u>yes</u>	<u>yes</u>	<u>"</u>	<u>"</u>
Cause of death data	<u>yes</u>	<u>yes</u>	<u>"</u>	<u>"</u>

☐ Mark (X) this box if you attach a continuation sheet.

9.02 In accordance with the instructions, complete the following table for each activity in which you engage.

CBI

☐

a.	b.	c.	d.	e.
<u>Activity</u>	<u>Process Category</u>	<u>Yearly Quantity (kg)</u>	<u>Total Workers</u>	<u>Total Worker-Hours</u>
Manufacture of the listed substance	Enclosed	<u>NA</u>	<u>          </u>	<u>          </u>
	Controlled Release	<u>NA</u>	<u>          </u>	<u>          </u>
	Open	<u>NA</u>	<u>          </u>	<u>          </u>
On-site use as reactant	Enclosed	<u>NA</u>	<u>          </u>	<u>          </u>
	Controlled Release	<u>NA</u>	<u>          </u>	<u>          </u>
	Open	<u>NA</u>	<u>          </u>	<u>          </u>
On-site use as nonreactant	Enclosed	<u>NA</u>	<u>          </u>	<u>          </u>
	Controlled Release	<u>NA</u>	<u>          </u>	<u>          </u>
	Open	<u>NA</u>	<u>          </u>	<u>          </u>
On-site preparation of products	Enclosed	<u>NA</u>	<u>          </u>	<u>          </u>
	Controlled Release	<u>NA</u>	<u>          </u>	<u>          </u>
	Open	<u>21kg</u>	<u>34</u>	<u>1560</u>

☐ Mark (X) this box if you attach a continuation sheet.

9.03 Provide a descriptive job title for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance.

CBI

☐

Labor Category

Descriptive Job Title

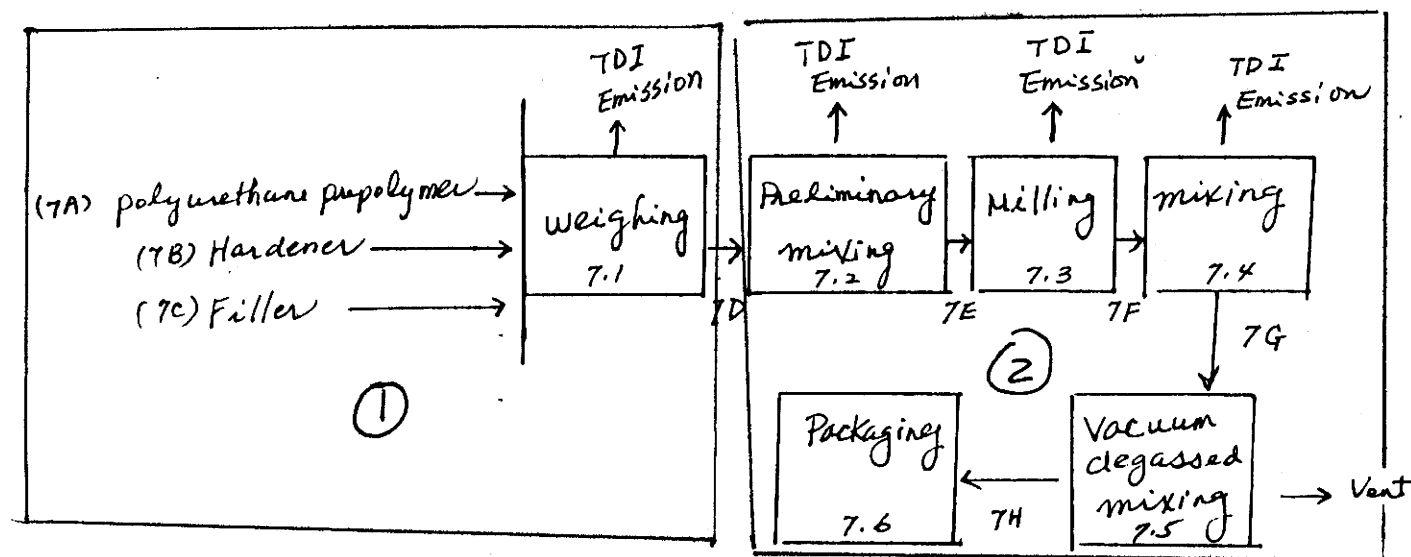
A	Master Batchers, Adhesive Mixer	550 685 122
B	Container Filler	559 685 018
C	Quality Assurance	505 587 014
D		
E		
F		
G		
H		
I		
J		

☐ Mark (X) this box if you attach a continuation sheet.

9.04 In accordance with the instructions, provide your process block flow diagram(s) and indicate associated work areas.

CBI

☐ Process type ..... Polyurethane Prepolymer Mixing Process



☐ Mark (X) this box if you attach a continuation sheet.

9.05 Describe the various work area(s) shown in question 9.04 that encompass workers who may potentially come in contact with or be exposed to the listed substance. Add any additional areas not shown in the process block flow diagram in question 7.01 or 7.02. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type ..... Polyurethane Prepolymer Mixing Process

Work Area ID

Description of Work Areas and Worker Activities

1	<u>Weighing out TDI polyurethane prepolymer</u>
2	<u>Hobart mixing, Jiffy, 3 roll mill</u>
3	<u>Weighing (Batches)</u>
4	<u>Mixing: Addition of hardener + spatula mixing</u>
5	<u>Vacuum degassing</u>
6	<u>Packaging into cartridges under vacuum</u>
7	
8	
9	
10	

☐ Mark (X) this box if you attach a continuation sheet.

9.06 Complete the following table for each work area identified in question 9.05, and for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance. Photocopy this question and complete it separately for each process type and work area.

☐ Process type ..... Polyurethane Prepolymer Mixing Process  
 Work area ..... 1-6

Labor Category	Number of Workers Exposed (per Max)	Mode of Exposure (e.g., direct skin contact)	Physical State of Listed Substance <sup>1</sup>	Average Length of Exposure Per Day <sup>2</sup>	Number of Days per Year Exposed
1	1	skin / Inhalation	OL	D	100
2	4	skin / Inhalation	OL	D	100
3	1	Inhalation	OL	D	100
4	1	skin / Inhalation	OL	D	100
5	1	Inhalation	OL	D	100
6	1	Inhalation	OL	D	100

<sup>1</sup>Use the following codes to designate the physical state of the listed substance at the point of exposure:

GC = Gas (condensable at ambient temperature and pressure)  
 GU = Gas (uncondensable at ambient temperature and pressure; includes fumes, vapors, etc.)  
 SO = Solid

SY = Sludge or slurry  
 AL = Aqueous liquid  
 OL = Organic liquid  
 IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

<sup>2</sup>Use the following codes to designate average length of exposure per day:

A = 15 minutes or less  
 B = Greater than 15 minutes, but not exceeding 1 hour  
 C = Greater than one hour, but not exceeding 2 hours

D = Greater than 2 hours, but not exceeding 4 hours  
 E = Greater than 4 hours, but not exceeding 8 hours  
 F = Greater than 8 hours

☐ Mark (X) this box if you attach a continuation sheet.

9.07 For each labor category represented in question 9.06, indicate the 8-hour Time Weighted Average (TWA) exposure levels and the 15-minute peak exposure levels. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type ..... Polyurethane Prepolymer mixing process  
Work area ..... 1-6

Labor Category	8-hour TWA Exposure Level (ppm, mg/m <sup>3</sup> , other-specify)	15-Minute Peak Exposure Level (ppm, mg/m <sup>3</sup> , other-specify)
<u>1</u>	<u>0.0013 ppm</u>	<u>Not Known</u>
<u>2</u>	<u>&lt; 0.0013 ppm</u>	<u>not known</u>
<u>3</u>	<u>&lt; 0.0013 ppm</u>	<u>not known</u>
<u>4</u>	<u>&lt; 0.0013 ppm</u>	<u>not known</u>
<u>5</u>	<u>&lt; 0.0013 ppm</u>	<u>not known</u>
<u>6</u>	<u>0 ppm</u>	<u>not known</u>

☐ Mark (X) this box if you attach a continuation sheet.



PART B WORK PLACE MONITORING PROGRAM

9.08 If you monitor worker exposure to the listed substance, complete the following table.

CBI

☐

Sample/Test	Work Area ID	Testing Frequency (per year)	Number of Samples (per test)	Who Samples <sup>1</sup>	Analyzed In-House (Y/N)	Number of Years Records Maintained
Personal breathing zone	1-6	2 X	1	A	Y	1 1/2 yr
General work area (air)	None					
Wipe samples	None					
Adhesive patches	None					
Blood samples	None					
Urine samples	None					
Respiratory samples	None					
Allergy tests	None					
Other (specify)						
Other (specify)						
Other (specify)						

<sup>1</sup>Use the following codes to designate who takes the monitoring samples:

- A = Plant industrial hygienist
- B = Insurance carrier
- C = OSHA consultant
- D = Other (specify) \_\_\_\_\_

☐ Mark (X) this box if you attach a continuation sheet.

9.09 For each sample type identified in question 9.08, describe the type of sampling and analytical methodology used for each type of sample.

<input type="checkbox"/> Sample Type	Sampling and Analytical Methodology
Personal Breathing Zone	TDE staining badge w/ color standard

9.10 If you conduct personal and/or ambient air monitoring for the listed substance, specify the following information for each equipment type used.

<input type="checkbox"/> Equipment Type <sup>1</sup>	Detection Limit <sup>2</sup>	Manufacturer	Averaging Time (hr)	Model Number
None				

<sup>1</sup>Use the following codes to designate personal air monitoring equipment types:

- A = Passive dosimeter
- B = Detector tube
- C = Charcoal filtration tube with pump
- D = Other (specify) \_\_\_\_\_

Use the following codes to designate ambient air monitoring equipment types:

- E = Stationary monitors located within work area
- F = Stationary monitors located within facility
- G = Stationary monitors located at plant boundary
- H = Mobile monitoring equipment (specify) \_\_\_\_\_
- I = Other (specify) \_\_\_\_\_

<sup>2</sup>Use the following codes to designate detection limit units:

- A = ppm
- B = Fibers/cubic centimeter (f/cc)
- C = Micrograms/cubic meter ( $\mu\text{m}^3$ )

☐ Mark (X) this box if you attach a continuation sheet.

9.11 If you conduct routine medical tests for monitoring the health effects of exposure to the listed substance, specify the type and frequency of the tests.

CBI

☐

Test Description

Frequency  
(weekly, monthly, yearly, etc.)

*NA*

☐ Mark (X) this box if you attach a continuation sheet.

---

PART C ENGINEERING CONTROLS

---

9.12 Describe the engineering controls that you use to reduce or eliminate worker exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type ..... Polyurethane Prepolymer Mixing Process

Work area ..... \_\_\_\_\_

<u>Engineering Controls</u>	<u>Used (Y/N)</u>	<u>Year Installed</u>	<u>Upgraded (Y/N)</u>	<u>Year Upgraded</u>
Ventilation:				
Local exhaust	<u>N</u>	_____	_____	_____
General dilution	<u>Y</u>	_____	_____	_____
Other (specify) _____	_____	_____	_____	_____
Vessel emission controls	<u>N</u>	_____	_____	_____
Mechanical loading or packaging equipment	<u>N</u>	_____	_____	_____
Other (specify) _____	_____	_____	_____	_____

---

☐ Mark (X) this box if you attach a continuation sheet.

---

9.13 Describe all equipment or process modifications you have made within the 3 years prior to the reporting year that have resulted in a reduction of worker exposure to the listed substance. For each equipment or process modification described, state the percentage reduction in exposure that resulted. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type ..... Polyurethane Prepolymer mixing process

Work area .....

Equipment or Process Modification	Reduction in Worker Exposure Per Year (%)
<u>None</u>	

☐ Mark (X) this box if you attach a continuation sheet.

---

PART D PERSONAL PROTECTIVE AND SAFETY EQUIPMENT

---

9.14 Describe the personal protective and safety equipment that your workers wear or use in each work area in order to reduce or eliminate their exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type ..... Polyurethane Prepolymer Mixing Process  
Work area ..... 1-6

<u>Equipment Types</u>	<u>Wear or Use (Y/N)</u>
Respirators	<u>Y</u>
Safety goggles/glasses	<u>Y</u>
Face shields	<u>N</u>
Coveralls	<u>N</u>
Bib aprons	<u>Y</u>
Chemical-resistant gloves	<u>N</u>
Other (specify)	
<u>vinyl gloves</u>	

---

☐ Mark (X) this box if you attach a continuation sheet.

---

- 9.15 If workers use respirators when working with the listed substance, specify for each process type, the work areas where the respirators are used, the type of respirators used, the average usage, whether or not the respirators were fit tested, and the type and frequency of the fit tests. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type ..... Polyurethane Prepolymer Mixing Process

Work Area	Respirator Type	Average Usage <sup>1</sup>	Fit Tested (Y/N)	Type of Fit Test <sup>2</sup>	Frequency of Fit Tests (per year)
<u>1-6</u>	<u>Wilson 6100 w/TDI Cartridge</u>	<u>E</u>	<u>Y</u>	<u>QL</u>	<u>Every working day</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

<sup>1</sup>Use the following codes to designate average usage:

A = Daily  
B = Weekly  
C = Monthly

D = Once a year

E = Other (specify) when TDI containing prepolymer is being used

<sup>2</sup>Use the following codes to designate the type of fit test:

QL = Qualitative  
QT = Quantitative

☐ Mark (X) this box if you attach a continuation sheet.

PART E WORK PRACTICES

- 9.19 Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this question and complete it separately for each process type and work area.

CBI

☐

Process type ..... Polyurethane Prepolymer mixing process

Work area ..... 1-6

Material Safety data sheet, respiratory protection,  
Right-to-Know Training program, HMIS coding  
Warning card.

- 9.20 Indicate (X) how often you perform each housekeeping task used to clean up routine leaks or spills of the listed substance. Photocopy this question and complete it separately for each process type and work area.

Process type ..... Polyurethane Prepolymer mixing process.

Work area ..... 1-6

<u>Housekeeping Tasks</u>	<u>Less Than Once Per Day</u>	<u>1-2 Times Per Day</u>	<u>3-4 Times Per Day</u>	<u>More Than 4 Times Per Day</u>
Sweeping	<u>                    </u>	<u>X</u>	<u>                    </u>	<u>                    </u>
Vacuuming	<u>                    </u>	<u>                    </u>	<u>                    </u>	<u>                    </u>
Water flushing of floors	<u>                    </u>	<u>                    </u>	<u>                    </u>	<u>                    </u>
Other (specify)				
<u>Wiping Bench</u>	<u>                    </u>	<u>X</u>	<u>                    </u>	<u>                    </u>

☐ Mark (X) this box if you attach a continuation sheet.



9.21 Do you have a written medical action plan for responding to routine or emergency exposure to the listed substance?

Routine exposure

☒ Yes ..... 1

No ..... 2

Emergency exposure

☒ Yes ..... 1

No ..... 2

If yes, where are copies of the plan maintained?

Routine exposure: Personnel Dept.

Emergency exposure: Personnel Dept.

9.22 Do you have a written leak and spill cleanup plan that addresses the listed substance? Circle the appropriate response.

Yes ..... 1

☒ No ..... 2

If yes, where are copies of the plan maintained? \_\_\_\_\_

Has this plan been coordinated with state or local government response organizations? Circle the appropriate response.

Yes ..... 1

No ..... 2

9.23 Who is responsible for monitoring worker safety at your facility? Circle the appropriate response.

Plant safety specialist ..... 1

Insurance carrier ..... 2

OSHA consultant ..... 3

Other (specify) \_\_\_\_\_ 4

☐ Mark (X) this box if you attach a continuation sheet.

---

SECTION 10 ENVIRONMENTAL RELEASE

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General Instructions:

Complete Part E (questions 10.23-10.35) for each non-routine release involving the listed substance that occurred during the reporting year. Report on all releases that are equal to or greater than the listed substance's reportable quantity value, RQ, unless the release is federally permitted as defined in 42 U.S.C. 9601, or is specifically excluded under the definition of release as defined in 40 CFR 302.3(22). Reportable quantities are codified in 40 CFR Part 302. If the listed substance is not a hazardous substance under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and, thus, does not have an RQ, then report releases that exceed 2,270 kg. If such a substance however, is designated as a CERCLA hazardous substance, then report those releases that are equal to or greater than the RQ. The facility may have answered these questions or similar questions under the Agency's Accidental Release Information Program and may already have this information readily available. Assign a number to each release and use this number throughout this part to identify the release. Releases over more than a 24-hour period are not single releases, i.e., the release of a chemical substance equal to or greater than an RQ must be reported as a separate release for each 24-hour period the release exceeds the RQ.

For questions 10.25-10.35, answer the questions for each release identified in question 10.23. Photocopy these questions and complete them separately for each release.

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PART A GENERAL INFORMATION

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10.01 Where is your facility located? Circle all appropriate responses.

CBI

- ☐ Industrial area ..... ①
- Urban area ..... 2
- Residential area ..... ③
- Agricultural area ..... 4
- Rural area ..... 5
- Adjacent to a park or a recreational area ..... 6
- Within 1 mile of a navigable waterway ..... 7
- Within 1 mile of a school, university, hospital, or nursing home facility ..... ⑧
- Within 1 mile of a non-navigable waterway ..... ⑨
- Other (specify) \_\_\_\_\_ 10
- 

☐ Mark (X) this box if you attach a continuation sheet.

---

10.02 Specify the exact location of your facility (from central point where process unit is located) in terms of latitude and longitude or Universal Transverse Mercader (UTM) coordinates.

Latitude ..... 33 ° 52 ' 7.2 "

Longitude ..... 118 ° 16 ' 56.6 "

UTM coordinates ..... Zone \_\_\_\_\_, Northing \_\_\_\_\_, Easting \_\_\_\_\_

10.03 If you monitor meteorological conditions in the vicinity of your facility, provide the following information.

Average annual precipitation ..... \_\_\_\_\_ inches/year

Predominant wind direction ..... \_\_\_\_\_

10.04 Indicate the depth to groundwater below your facility.

Depth to groundwater ..... Not Known meters

10.05 For each on-site activity listed, indicate (Y/N/NA) all routine releases of the listed substance to the environment. (Refer to the instructions for a definition of Y, N, and NA.)

CBI

☐

On-Site Activity	Environmental Release		
	Air	Water	Land
Manufacturing	<u>NA</u>	<u>NA</u>	<u>NA</u>
Importing	<u>NA</u>	<u>NA</u>	<u>NA</u>
Processing	<u>Y</u>	<u>N</u>	<u>N</u>
Otherwise used	<u>NA</u>	<u>NA</u>	<u>NA</u>
Product or residual storage	<u>N</u>	<u>N</u>	<u>N</u>
Disposal	<u>N</u>	<u>N</u>	<u>N</u>
Transport	<u>N</u>	<u>N</u>	<u>N</u>

☐ Mark (X) this box if you attach a continuation sheet.

10.06 Provide the following information for the listed substance and specify the level of precision for each item. (Refer to the instructions for further explanation and an example.)

CBI

☐

Quantity discharged to the air ..... kg/yr  $\pm$  \_\_\_\_ %

Quantity discharged in wastewaters ..... kg/yr  $\pm$  \_\_\_\_ %

Quantity managed as other waste in on-site  
treatment, storage, or disposal units ..... 0 kg/yr  $\pm$  \_\_\_\_ %

Quantity managed as other waste in off-site  
treatment, storage, or disposal units ..... 0 kg/yr  $\pm$  \_\_\_\_ %

☐ Mark (X) this box if you attach a continuation sheet.

10.08 Describe the control technologies used to minimize release of the listed substance for each process stream containing the listed substance as identified in your process block or residual treatment block flow diagram(s). Photocopy this question and complete it separately for each process type.

CBI

☐ Process type ..... \_\_\_\_\_

<u>Stream ID Code</u>	<u>Control Technology</u>	<u>Percent Efficiency</u>
_____	NA	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

PART B RELEASE TO AIR

- 10.09 Point Source Emissions -- Identify each emission point source containing the listed substance in terms of a Stream ID Code as identified in your process block or residual treatment block flow diagram(s), and provide a description of each point source. Do not include raw material and product storage vents, or fugitive emission sources (e.g., equipment leaks). Photocopy this question and complete it separately for each process type.

CBI

☐

Process type .....

*Polyurethane Prepolymer mixing process*

Point Source  
ID Code

Description of Emission Point Source

*7.5*

*Vent fans for mixing*

☐ Mark (X) this box if you attach a continuation sheet.

☐ Mark (X) this box if you attach a continuation sheet.

10.10 Emission Characteristics - - Characterize the emissions for each Point Source ID Code identified in question 10.09 by completing the following table.

CBI

<input type="checkbox"/> Point Source ID Code	Physical State <sup>1</sup>	Average Emissions (kg/day)	Frequency <sup>2</sup> (days/yr)	Duration <sup>3</sup> (min/day)	Average Emission Factor <sup>4</sup>	Maximum Emission Rate (kg/min)	Maximum Emission Rate Frequency (events/yr)	Maximum Emission Rate Duration (min/event)
	NA							

<sup>1</sup>Use the following codes to designate physical state at the point of release:

G = Gas; V = Vapor; P = Particulate; A = Aerosol; O = Other (specify) \_\_\_\_\_

<sup>2</sup>Frequency of emission at any level of emission

<sup>3</sup>Duration of emission at any level of emission

<sup>4</sup>Average Emission Factor — Provide estimated ( $\pm$  25 percent) emission factor (kg of emission per kg of production of listed substance)

CBI

[ ]

[illegible]

<sup>3</sup>Use the following codes to designate vent type:

V = Vertical

☐ Mark (X) this box if you attach a continuation sheet.



10.12 If the listed substance is emitted in particulate form, indicate the particle size distribution for each Point Source ID Code identified in question 10.09. Photocopy this question and complete it separately for each emission point source.

CBI

☐

Point source ID code .....

Size Range (microns)

Mass Fraction (% ± % precision)

< 1

NA

≥ 1 to < 10

≥ 10 to < 30

≥ 30 to < 50

≥ 50 to < 100

≥ 100 to < 500

≥ 500

Total = 100%

☐ Mark (X) this box if you attach a continuation sheet.

PART C FUGITIVE EMISSIONS

10.13 Equipment Leaks -- Complete the following table by providing the number of equipment types listed which are exposed to the listed substance and which are in service according to the specified weight percent of the listed substance passing through the component. Do this for each process type identified in your process block or residual treatment block flow diagram(s). Do not include equipment types that are not exposed to the listed substance. If this is a batch or intermittently operated process, give an overall percentage of time per year that the process type is exposed to the listed substance. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type .....  
Percentage of time per year that the listed substance is exposed to this process type ..... %

Equipment Type	Number of Components in Service by Weight Percent of Listed Substance in Process Stream					Greater than 99%
	Less than 5%	5-10%	11-25%	26-75%	76-99%	
Pump seals <sup>1</sup>	None					
Packed						
Mechanical						
Double mechanical <sup>2</sup>						
Compressor seals <sup>1</sup>						
Flanges						
Valves						
Gas <sup>3</sup>						
Liquid						
Pressure relief devices <sup>4</sup> (Gas or vapor only)						
Sample connections						
Gas						
Liquid						
Open-ended lines <sup>5</sup> (e.g., purge, vent)						
Gas						
Liquid						

<sup>1</sup>List the number of pump and compressor seals, rather than the number of pumps or compressors

10.13 continued on next page

☐ Mark (X) this box if you attach a continuation sheet.

10.13 (continued)

<sup>2</sup>If double mechanical seals are operated with the barrier (B) fluid at a pressure greater than the pump stuffing box pressure and/or equipped with a sensor (S) that will detect failure of the seal system, the barrier fluid system, or both, indicate with a "B" and/or an "S", respectively

<sup>3</sup>Conditions existing in the valve during normal operation

<sup>4</sup>Report all pressure relief devices in service, including those equipped with control devices

<sup>5</sup>Lines closed during normal operation that would be used during maintenance operations

10.14 Pressure Relief Devices with Controls -- Complete the following table for those pressure relief devices identified in 10.13 to indicate which pressure relief devices in service are controlled. If a pressure relief device is not controlled, enter "None" under column c.

☐

a. Number of Pressure Relief Devices	b. Percent Chemical in Vessel <sup>1</sup>	c. Control Device	d. Estimated Control Efficiency <sup>2</sup>
None			

<sup>1</sup>Refer to the table in question 10.13 and record the percent range given under the heading entitled "Number of Components in Service by Weight Percent of Listed Substance" (e.g., <5%, 5-10%, 11-25%, etc.)

<sup>2</sup>The EPA assigns a control efficiency of 100 percent for equipment leaks controlled with rupture discs under normal operating conditions. The EPA assigns a control efficiency of 98 percent for emissions routed to a flare under normal operating conditions

☐ Mark (X) this box if you attach a continuation sheet.

10.15 Equipment Leak Detection -- If a formal leak detection and repair program is in place, complete the following table regarding those leak detection and repair procedures. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type ..... \_\_\_\_\_

Equipment Type	Leak Detection	Detection	Frequency	Repairs	Repairs
	Concentration (ppm or mg/m <sup>3</sup> ) Measured at Inches from Source				
		Device <sup>1</sup>	of Leak Detection (per year)	Initiated (days after detection)	Completed (days after initiated)
Pump seals					
Packed	<i>None</i>				
Mechanical					
Double mechanical					
Compressor seals					
Flanges					
Valves					
Gas					
Liquid					
Pressure relief devices (gas or vapor only)					
Sample connections					
Gas					
Liquid					
Open-ended lines					
Gas					
Liquid					

<sup>1</sup>Use the following codes to designate detection device:

POVA = Portable organic vapor analyzer

FPM = Fixed point monitoring

0 = Other (specify) \_\_\_\_\_

☐ Mark (X) this box if you attach a continuation sheet.

☐ Mark (X) this box if you attach a continuation sheet.

- 10.16 Raw Material, Intermediate and Product Storage Emissions - - Complete the following table by providing the information on each liquid raw material, intermediate, and product storage vessel containing the listed substance as identified in your process block or residual treatment block flow diagram(s).

CBI

☐

Vessel Type <sup>1</sup>	Floating Roof <sup>2</sup> Seals <sup>2</sup>	Composition of Stored Materials <sup>3</sup>	Throughput (liters per year)	Vessel Filling Rate (gpm)	Vessel Filling Duration (min)	Vessel Inner Diameter (m)	Vessel Height (m)	Operating Volume (l)	Vessel Emission Controls <sup>4</sup>	Design Flow Rate <sup>5</sup>	Vent Diameter (cm)	Control Efficiency (%)	Basis for Estimate <sup>6</sup>
	NA												

<sup>1</sup>Use the following codes to designate vessel type:

F = Fixed roof  
 CIF = Contact internal floating roof  
 NCIF = Noncontact internal floating roof  
 EFR = External floating roof  
 P = Pressure vessel (indicate pressure rating)  
 H = Horizontal  
 U = Underground

<sup>2</sup>Use the following codes to designate floating roof seals:

MS1 = Mechanical shoe, primary  
 MS2 = Shoe-mounted secondary  
 MS2R = Rim-mounted, secondary  
 LM1 = Liquid-mounted resilient filled seal, primary  
 LM2 = Rim-mounted shield  
 LMW = Weather shield  
 VM1 = Vapor mounted resilient filled seal, primary  
 VM2 = Rim-mounted secondary  
 VMW = Weather shield

<sup>3</sup>Indicate weight percent of the listed substance. Include the total volatile organic content in parenthesis

<sup>4</sup>Other than floating roofs

<sup>5</sup>Gas/vapor flow rate the emission control device was designed to handle (specify flow rate units)

<sup>6</sup>Use the following codes to designate basis for estimate of control efficiency:

C = Calculations  
 S = Sampling

---

PART E NON-ROUTINE RELEASES

---

10.23 Indicate the date and time when the release occurred and when the release ceased or was stopped. If there were more than six releases, attach a continuation sheet and list all releases.

<u>Release</u>	<u>Date Started</u>	<u>Time (am/pm)</u>	<u>Date Stopped</u>	<u>Time (am/pm)</u>
<u>1</u>	<u>NA</u>	<u>          </u>	<u>          </u>	<u>          </u>
<u>2</u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
<u>3</u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
<u>4</u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
<u>5</u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
<u>6</u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>

---

10.24 Specify the weather conditions at the time of each release.

<u>Release</u>	<u>Wind Speed (km/hr)</u>	<u>Wind Direction</u>	<u>Humidity (%)</u>	<u>Temperature (°C)</u>	<u>Precipitation (Y/N)</u>
<u>1</u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
<u>2</u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
<u>3</u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
<u>4</u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
<u>5</u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
<u>6</u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>

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☐ Mark (X) this box if you attach a continuation sheet.

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APPENDIX II: Substantiation Form and Instructions  
to Accompany Claims of Confidentiality Under the  
Comprehensive Assessment Information Rule (CAIR)

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If you assert one or more claims of confidentiality for information submitted on a Comprehensive Assessment Information Rule (CAIR) form, please answer, pursuant to 40 CFR 740.219, all the following questions in the space provided. Type all responses. If you need more space to answer a particular question, please use additional sheets. If you use additional sheets, be sure to include the section, number, and (if applicable) subpart of the question being answered, and write your facility's name and Dun & Bradstreet Number in the lower right-hand corner of each sheet. A completed copy of this form must accompany all submissions containing one or more claims of confidentiality. Failure to do so will result in the waiver of your claim of confidentiality.

EPA has identified six information categories as those which encompass all claims of confidentiality. These are: Submitter identity (h); Substance identity (i); Volume manufactured, imported, or processed (j); Use information (k); Process information (l); and Other information (m). Respondents who assert a CBI claim on the reporting form must mark the letter(s) (h through m) that represent(s) the appropriate category(ies) of confidentiality in the box adjacent to the question, and answer the questions in this form.

Respondents who assert a CBI claim for information submitted under CAIR must also provide EPA with sanitized and unsanitized versions of their submissions. The unsanitized version must be complete and contain all information being claimed as confidential. The sanitized copy must contain only information not claimed as confidential. EPA will place the second copy of the submission in the public file. Failure to submit the second copy of the form at the time the respondent submits the reporting form containing confidential information or after receipt of a notice from EPA thereafter will result in a waiver of the respondent's claim of confidentiality.

---

Please indicate the CAS Registry Number (if known) or chemical name (if the CAS Registry Number is not known) for the substance that is the subject of this form:

If you are reporting on a tradename, please provide the tradename for the substance that is the subject of this form:

*Conap EN-2 part A, Conap EN-5 part A, Conap EN-7 part A, Solithane 113*

Does this form contain CBI? ☐ Yes ☒ No

If the answer to this question is yes, you must bracket the text claimed as CBI. Any unbracketed information may be placed in the public file.

---

☐ Mark (X) this box if you attach a continuation sheet.

---

ABLEBOND® 724-14C

POLYURETHANE ADHESIVE

TYPICAL PROPERTIES

CONSISTENCY:	Heavy paste, nonflowing
CURE OPTIONS (minimum):	72 hrs @ 25°C 3 hrs @ 75°C or 1 hr @ 95°C
WORK LIFE @ 25°C:	1/2 hour
SERVICE TEMPERATURE RANGE:	-55° to 125°C
HARDNESS (SHORE A):	92
SPECIFIC GRAVITY:	1.1
LAP SHEAR STRENGTH* Al to Al @ 25°C:	1900 psi
VOLUME RESISTIVITY:*	$1 \times 10^{10}$ ohm-cm
DIELECTRIC CONSTANT:	7.0 (@ 1 KHz)
STORAGE LIFE @ -40°C:	1 month

\* Specimen cured 3 hrs @ 74°C.

Typical properties are not intended to be used as specification limits.

DESCRIPTION

Ablebond 724-14C is a premixed and frozen, polyurethane adhesive which exhibits good adhesion to a wide variety of substrates, including aluminum, solder, nylon, mylar, and steel.

This resilient adhesive can also be used for tacking wires and as a protective coating.

Ablebond 724-14C contains a fluorescent trace for inspection purposes.

89 JUL -6 AM10:35  
USC DODD HRT CONTROL  
OFFICE

 **ABLESTIK®**

Rev 3/89



**CAUTION** This product may cause skin irritation in sensitive persons. Avoid skin contact. If contact does occur, wash area immediately with soap and water. Please refer to Material Safety Data Sheet (OSHA) for more details.



833 West 182nd Street, Gardena, CA 90248  
(213) 532-9341 TWX 910-346-7606 FAX 213-516-9417

DISCLAIMER: All statements, technical information and recommendations contained herein are based on tests we believe to be accurate, but the accuracy or completeness thereof is not guaranteed, and the following is made in lieu of

warranty express or implied. Seller and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising from the use or inability to use the product. Before using, user shall determine the suitability of the product for his intended

use, and user assumes all risk and liability whatsoever in connection therewith. No statement or recommendation not contained herein shall have any force or effect unless in an agreement signed by officers of seller and manufacturer.

ABLEBOND® 724-5 G  
Glass ball filled adhesive

LOW VISCOSITY POLYURETHANE ADHESIVE

TYPICAL PROPERTIES

CONSISTENCY:	Viscous liquid
CURE OPTIONS (minimum):	48 hrs @ 25°C 8 hrs @ 60°C or 3 hrs @ 74°C (preferred)
WORK LIFE @ 25°C:	1/2 hour
MAXIMUM CONTINUOUS SERVICE TEMPERATURE:	125°C
SERVICE TEMPERATURE RANGE:	-55° to 125°C
HARDNESS (SHORE A):	90
LAP SHEAR STRENGTH* A1 to A1 @ 25°C:	2200 psi
VOLUME RESISTIVITY:*	$2 \times 10^{11}$ ohm-cm
DIELECTRIC CONSTANT:	6.5 (@ 1 KHz)

\* Specimen cured 3 hrs @ 74°C.

DESCRIPTION

Ablebond® 724-5G adhesive is premixed and frozen, electrically insulating, polyurethane adhesive. This resilient adhesive exhibits good adhesion to a wide variety of substrates, including aluminum, solder, nylon, mylar, and steel.

This resilient adhesive can also be used for tacking wires and as a protective coating.

Ablebond® 724-5G does not contain any of the toxic ingredients commonly associated with polyurethane adhesive systems.

Typical properties are not intended to be used as specification limits.

## ADVANTAGES

### ELECTRICALLY INSULATING

Ablebond® 724-5G exhibits good dielectric properties.

### STRONG BONDS

This adhesive provides strong bonds to a variety of substrate materials.

### ROOM TEMPERATURE CURE

Ablebond® 724-5G adhesive may be cured at room temperature.

### NONTOXIC

Unlike many polyurethane adhesives, Ablebond 724-5G does not contain any known toxic ingredients.

## INSTRUCTIONS

1. Thaw adhesive to room temperature.
2. Apply adhesive as required.
3. Assemble bonds. Cure at one of the following schedules:

48 hrs @ 25°C  
8 hrs @ 60°C or  
3 hrs @ 74°C  
(preferred)

## AVAILABILITY

This adhesive is available in a variety of package sizes, ranging from 1cc to 6cc.

## STORAGE LIFE

This product must be stored frozen and must be continuously stored at -40°C. At -40°C, storage life is one (1) month.

**CAUTION** This product may cause skin irritation in sensitive persons. Avoid skin contact. If contact does occur, wash area immediately with soap and water. Please refer to Material Safety Data Sheet (OSHA) for more details.



833 West 182nd Street, Gardena, CA 90248  
(213) 532-9341 TWX 910-346-7606 FAX 213-516-9417

DISCLAIMER: All statements, technical information and recommendations contained herein are based on tests we believe to be accurate, but the accuracy or completeness thereof is not guaranteed, and the following is made in lieu of

warranty express or implied. Seller and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising from the use or inability to use the product. Before using, user shall determine the suitability of the product for his intended

use, and user assumes all risk and liability whatsoever in connection therewith. No statement or recommendation not contained herein shall have any force or effect unless in an agreement signed by officers of seller and manufacturer.



# ABLESTIK LABORATORIES

833 WEST 182ND STREET, GARDENA, CALIFORNIA 90248 • (213) 321-6252

ABLESTIK 724-1

## CURING CONDITION

Cure, hr./°F	3 hrs. @ 165°F
Pot Life at room temperature	1 hr.

## PHYSICAL PROPERTIES

Color	Clear, amber
Lap Shear Strength	2200. PSI
Hardness, durometer A	86
100% Modulus, psi	1100
Tensile Strength, psi	4200-5000
Elongation at break, %	450
Specific Gravity at 75°F	1.10
Thermal Conductivity, BTU/(hr.) (Sq.Ft.) (F°/in.)	0.917
Linear Coefficient of thermal expansion, in./in./F°	
-32°F to + 32°F	$1.43 \times 10^{-4}$
32°F to 75°F	$1.01 \times 10^{-4}$
75°F to 212°F	$0.95 \times 10^{-4}$
212°F to 302°F	$0.90 \times 10^{-4}$
Linear Shrinkage, %	1.0
Compression set, % (Method B), 22hr. at 158°F	26
Compression set, % (Method A), 22hr. at 158°F	
under 1350 psi	9
Brittleness temperature (Solenoid), F°	Below -90
Impact resistance (Izod)	flexed
Abrasion index (Bureau of Standards)	175
Tear Strength (Graves) Lb./in.	550
Tear Strength (Split) Lb./in.	70

## ELECTRICAL PROPERTIES

	0.1KC	100KC
Power Factor, %, at 75°F	4.70	5.92
at 158°F	9.45	4.15
at 212°F	12.60	3.90
Dielectric constant (SIC)		
at 75°F	9.37	7.78
at 158°F	11.05	9.62
at 212°F	11.48	9.87
Volume resistivity, ohm-cm		
at 75°F	$4.8 \times 10^{11}$	
at 158°F	$3.8 \times 10^{10}$	
at 212°F	$2.3 \times 10^{10}$	

## STORAGE LIFE

30 days from date of manufacture, when stored at -40°F or colder.

**CAUTION** This product may cause skin irritation in sensitive persons. Avoid skin contact. If contact does occur, wash area immediately with soap and water. Please refer to Material Safety Data Sheet (OSHA) for more details.



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use, and user assumes all risk and liability whatsoever in connection therewith. No statement or recommendation not contained herein shall have any force or effect unless in an agreement signed by officers of seller and manufacturer.

ABLEBOND<sup>®</sup> 724-9  
(Preliminary)

POLYURETHANE ADHESIVE

TYPICAL PROPERTIES

VISCOSITY @ 25°C:	18,595 cps <sup>1</sup> 17,000 cps <sup>2</sup>
WORK LIFE @ 25°C:	1 hour
CURE (minimum):	3 hours @ 75°C
HARDNESS (SHORE A):	
SPECIFIC GRAVITY:	1.1
LAP SHEAR STRENGTH <sup>3</sup>	
Al to Al @ 25°C:	1000 psi
VOLUME RESISTIVITY:	$2.9 \times 10^{10}$ ohm-cm
DIELECTRIC CONSTANT:	8.6 (@ 1 KHz)
DISSIPATION FACTOR:	0.056 (@ 1 KHz)
STORAGE LIFE	
@ -40°C:	1 month

<sup>1</sup>Determined using Brookfield Cone & Plate, CP-51  
@ 5 rpm.

<sup>2</sup>Determined using Brookfield Cone & Plate, CP-51  
@ 10 rpm.

<sup>3</sup>Specimen cured 4 hours @ 75°C.

DESCRIPTION

Ablebond<sup>®</sup> 724-9 is a resilient, polyurethane adhesive which bonds to a variety of metal and plastic surfaces.

This adhesive offers the advantages of a MOCA-cured polyurethane, but does not contain MOCA (which has been restricted by OSHA).

Typical properties are not intended to be used  
as specification limits.



**CAUTION** This product may cause skin irritation in sensitive persons. Avoid skin contact. If contact does occur, wash area immediately with soap and water. Please refer to Material Safety Data Sheet (OSHA) for more details.



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## ABLESTIK LABORATORIES

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ABLEBOND

724 -10

### DESCRIPTION

ABLEBOND 724-10 is a solvent containing polyurethane adhesive used to bond flexible plastics such as polyvinyl chloride and ABS. This product is also an excellent primer for difficult-to-bond metals such as tin.

### TYPICAL PROPERTIES

Color	Transparent, Light amber
Work Life	1 Hour
Suggested Cure	48 hours @ room temperature, or 1 hour @ room temp. plus 3 hours @ 165°F
Hardness (Shore A)	65 (heat cured)
Lap Shear @77°F	1000 PSI
Volume Resistivity @77°F	$1 \times 10^9$ ohm-cm

### STORAGE LIFE

Frozen premixed adhesive      2 weeks (max) @ -40°F or colder



**CAUTION** This product may cause skin irritation in sensitive persons. Avoid skin contact. If contact does occur, wash area immediately with soap and water. Please refer to Material Safety Data Sheet (OSHA) for more details.



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use, and user assumes all risk and liability whatsoever in connection therewith. No statement or recommendation not contained herein shall have any force or effect unless in an agreement signed by officers of seller and manufacturer.

Ablebond 724-8

POLYURETHANE ADHESIVE

TYPICAL PROPERTIES

COLOR: Light amber  
CONSISTENCY: Medium paste  
CURE OPTION (minimum): 3 hrs @ 75°C  
WORK LIFE @ 25°C: 1 hour  
HARDNESS (SHORE A): 90  
LAP SHEAR STRENGTH\*  
A1 to A1 @ 25°C: 1700 psi  
STORAGE LIFE @ -40°C: 1 month

\* Specimen cured 3 hrs @ 75°C.

DESCRIPTION

Ablebond 724-8 is a resilient polyurethane adhesive, which bonds to a variety of metal and plastic surfaces.

Ablebond 724-8 offers the advantages of a MOCA cured polyurethane adhesive, but does not contain MOCA (which has been restricted by OSHA).

Typical properties are not intended to be used as specification limits.



10/83

**CAUTION** This product may cause skin irritation in sensitive persons. Avoid skin contact. If contact does occur, wash area immediately with soap and water. Please refer to Material Safety Data Sheet (OSHA) for more details.



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use, and user assumes all risk and liability whatsoever in connection therewith. No statement or recommendation contained herein shall have any force or effect unless in an agreement signed by officers of seller and manufacturer.

ABLEBOND 724-17  
(Preliminary)

POLYURETHANE ADHESIVE

TYPICAL PROPERTIES

CURE OPTIONS (minimum):	48 hrs @ 25°C or 8 hrs @ 60°C or 3 hrs @ 75°C (preferred)
WORK LIFE @ 25°C:	1/2 hour
MAXIMUM CONTINUOUS SERVICE TEMPERATURE:	125°C
SERVICE TEMPERATURE RANGE:	-55° to 125°C

Typical properties are not intended to be used as  
specification limits.



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C O N A P I N C .

1405 Buffalo St.

Olean, New York 14760

716/372-9650

===== MATERIAL SAFETY DATA SHEET =====

Note: This form is to be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Blank spaces are not permitted.

===== I. IDENTIFICATION =====

Trade Name Conathane EN-2 Part A Date: 12/29/88

Chemical Name, common name: Complex Mixture; Polyurethane Prepolymer

===== II. HAZARDOUS INGREDIENTS =====

Chemical Names CAS No. % ACGIH(TLV) OSHA(PEL) Other

Toluene 2,4 Diisocyanate 584-84-9 <8%

Toluene 2,6 Diisocyanate 91-08-7 <2%

.005ppm TWA .02ppm ND

Material may present a dust hazard if cut, ground or machined after curing.

===== III. PHYSICAL DATA =====

Boiling Point ND !Specific Gravity (H2O=1) 1.06

Vapor Pressure, mm Hg ND !Vapor Density (air=1) ND

Melting Pt./Range ND !Evaporation rate (Ether=1) ND

Solubility in Water: REACTS !Physical State: LIQUID

Percent volatile by volume: Negligible

Appearance and Odor: Liquid; For TDI Sharp pungent (odor threshold greater than TLV)

===== IV. FIRE AND EXPLOSION DATA =====

Flash Point, F (Method): > 260 F PMCC

Flammable Limits ND LEL ND UEL ND

Extinguishing Materials:

-XX-Water Spray -XX-Dry Chemical -XX-Carbon Dioxide

-XX-Foam -ND-Other:

Special Firefighting Procedures/Unusual Fire or Explosion Hazards:

Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by fire fighters. No skin surface should be exposed. During a fire TDI vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. At temperatures greater than 350 F TDI forms carbodiimides with the release of CO2 which can cause pressure build-up in closed containers. Explosive rupture is possible. Therefore, use cold water to cool fire-exposed containers.

===== V. HEALTH HAZARD INFORMATION =====

ACUTE TOXICITY (Routes of entry)

Inhalation:

LC50.(4 hr.): Range 16-50ppm for 1-4 hr (Rat) on TDI. TDI vapors or mist at concentrations above the TLV can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing runny nose, sore

throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction). Persons with a preexisting, nonspecific bronchial hyperactivity can respond to concentrations below the TLV with similar symptoms as well as asthma attack. Exposure well above the TLV may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in the lungs). These effects are usually reversible. Chemical or hypersensitive pneumonitis, with flu-like symptoms (e.g. fever, chills), has also been reported. These symptoms can be delayed up to several hours after exposure.

**Ingestion:**

ORAL, LD50 > 5800 mg/kg (Rats). Can result in irritation and corrosive action in the mouth, stomach tissue and digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea.

**Eye Contact:**

Strongly irritating (Rabbits) OECD Guidelines. Liquid, aerosols or vapors are severely irritating and can cause pain, tearing, reddening and swelling. If left untreated, corneal damage can occur and injury is slow to heal. However, damage is usually reversible.

**Skin Contact:**

Skin sensitizer in guinea pigs. One study with guinea pigs reported that repeated skin contact with TDI caused respiratory sensitization. Isocyanates react with skin protein and moisture and can cause irritation which may include the following symptoms: reddening, swelling, rash, scaling or blistering. Cured material is difficult to remove.

**Skin Absorption:**

ND

-----  
**CHRONIC TOXICITY**

**Carcinogenicity:**

--X--Yes:      --X---NTP      --X---IARC      ----Federal OSHA

In a DRAFT of a lifetime bioassay, the National Toxicology Program reported that TDI caused an increase in the number of tumors in exposed rats over those counted in non-exposed rats. The TDI was administered by gavage where TDI was introduced into the stomach through a tube. In lifetime inhalation studies conducted by Hazelton Labs for the International Isocyanate Institute, TDI did NOT demonstrate carcinogenic activity in rats or mice.

**Target Organ Affected:**

No specific information available.

**Effects of Overexposure:**

**Inhalation:**

Inhalation of TDI vapors at concentrations above allowable limits can produce irritation of the mucous membranes in the respiratory tract resulting in running nose, sore throat, productive cough and a reduction in lung function (breathing obstruction). As a result of previous repeated overexposures or a single large dose, certain individuals

may develop isocyanate sensitization (chemical asthma) which will cause them to react to a later exposure to isocyanate at levels well below the TLV. Another type of response is hyperreactivity or hypersensitivity, in which persons, (as a result of a previous repeated overexposure or large single dose), can respond to small TDI concentrations at levels well below the .02ppm. Symptoms could be immediate or delayed and include chest tightness, wheezing, cough, shortness of breath or asthmatic attack. Hypersensitivity pneumonitis (with similar respiratory symptoms and fever which has been delayed) has also been reported. Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Chronic overexposure to isocyanate has also been reported to cause lung damage (including decrease in lung function) which may be permanent. Sensitization can either be temporary or permanent.

#### Eyes:

Liquid, vapors or aerosols are severely irritating to the eyes and can cause tears. Prolonged vapor contact may cause conjunctivitis. Corneal injury can occur which can be slow to heal; however damage is usually reversible.

#### Skin:

TDI reacts with skin protein and tissue moisture and can cause localized irritation as well as discoloration. Prolonged contact could produce reddening, swelling, or blistering and, in some individuals, skin sensitization resulting in dermatitis. Once sensitized a individual can develop recurring symptoms as a result of exposure to vapor.

#### Ingestion:

Ingestion could result in irritation and some corrosive action in the mouth, stomach tissue and digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea.

---

#### Medical Conditions Aggravated By Exposure

Asthma, other respiratory disorders (bronchitis, emphysema, bronchial hyperreactivity), skin allergies, eczema.

---

#### FIRST AID: EMERGENCY PROCEDURES

##### Eye Contact:

Flush with clean, lukewarm water (low pressure) for at least 15 minutes, occasionally lifting eyelids, and obtain medical attention. Refer individual to an ophthalmologist for immediate follow-up.

##### Skin Contact:

Remove contaminated clothing. Wash effected areas thoroughly with soap or tincture of green soap and water. Wash contaminated clothing thoroughly before reuse. For severe exposures, get under safety shower, remove clothing

under shower, get medical attention, and consult physician.

**Inhalation:**

Move to an area free from risk of further exposure.

Administer oxygen or artificial respiration as needed.

Obtain medical attention. Asthmatic-type symptoms may develop and be immediate or delayed up to several hours.

Consult physician.

**Ingested:**

Do not induce vomiting. Give 12 fl. oz. of milk or water to drink. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS

PERSON. Consult physician.

**Recommendations to Physician:**

Eyes: Stain for evidence of corneal injury. If cornea is burned, instill antibiotic steroid preparation frequently. Workplace vapors have produced reversible corneal epithelial edema impairing vision. This compound is a known skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burns. There is no specific antidote for ingestion treat symptomatically. Inducing vomiting is contraindicated because of the irritating nature of this compound. TDI is a known pulmonary sensitizer. Treatment is essentially symptomatic. An individual having a skin or pulmonary sensitization reaction to this material should be removed from exposure to any isocyanate.

===== VI. REACTIVITY DATA =====

Stability:                   --XX--Stable                   -NA--Unstable

Conditions to Avoid: Temperatures higher than recommended in product literature.

Incompatibility (materials to avoid):

Water, short chain alcohols, amines

Hazardous Decomposition Products

By heat and fire: carbon dioxide, carbon monoxide, oxides of nitrogen and traces of hydrogen cyanide, TDI.

Hazardous Polymerization: NA-May Occur   X-Will not occur

Conditions to avoid:

ND

===== VII. SPILL, LEAK AND DISPOSAL PROCEDURES =====

Steps to be taken if material is released or spilled:

Consult section VIII for proper protective equipment.

Cover the spill with sawdust, vermiculite, Fuller's earth or other absorbent material. Pour decontamination solution over the spill area and allow to react for at least 10 minutes. Collect the material in open top containers and add additional amounts of decontamination solution. Remove containers to a safe place, cover loosely, and allow to stand for 24 to 48 hours. Wash down spill area with decontamination solutions. Decontamination solutions: non-ionic surfactant Union Carbide's Tergitol TMN-10(20%) and water (80%); or concentrated ammonia (3-8%), detergent (2%), and water (90%). During spill clean-up, a self contained breathing apparatus or air line respirator and protective clothing must be worn. (See section VIII).

Reportable Quantity CERCLA: 100lbs

Waste Disposal Method:



Dispose according to any Local, State and Federal Regulations.

===== VIII. SPECIAL HANDLING INFORMATION =====  
Respiratory Protection:

A positive pressure air-supplied respirator is required whenever TDI concentrations exceed the Short-Term Exposure or Ceiling Limit of .02ppm or exceed the 8 hour Time Weighted Average TLV of 0.005 ppm. An air supplied respirator must also be worn during spray application, even if exhaust ventilation is used. For non-spray , short-term(less than 1 hour) situations where concentrations are near the TLV, a full face, air-purifying respirator equipped with organic cartridges or canisters can be used. However, TDI has poor warning properties since the odor at which TDI can be smelled is substantially higher than the 0.02 ppm. Therefore, proper fit and timely replacement of filter elements must be ensured. Observe OSHA regulations for respirator use. (29CFR 1910.134).

Ventilation:

Local exhaust should be used to maintain levels below the TLV whenever TDI containing material is handled, processed, or spray-applied. At normal room temperatures (70 F) TDI levels quickly exceed the TLV unless properly ventilated. Standard reference sources regarding industrial ventilation (e.g.,ACGIH INDUSTRIAL VENTILATION) should be consulted for guidance about adequate ventilation.

Protective Gloves:Chemical resistant gloves (butyl rubber, nitrile rubber, polyvinyl alcohol). However, please note that PVA degrades in water.

Eye Protection:

Liquid chemical goggles or full face shield should be worn. Contact lenses should not be worn.

Other Protective Clothing or Equipment:Safety showers and eyewash stations should be available. Cover as much of exposed skin as possible with appropriate clothing.

Work Practices, hygienic practices

Educate and train employees in safe use of product. Follow all label instructions.

===== IX SPECIAL PRECAUTIONS =====  
Handling and Storage:

Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspect.

Other Precautions:

Avoid contact with eyes and skin. Do not breathe the vapors.

===== X ADDITIONAL INFORMATION =====  
SARA Title III Requirements:

TDI is on the Extremely Hazardous Substance.

Chemical Name	Section: 302	CERCLA	313
Toluene 2,4 Diisocyanate	TPQ-500 LBS	RQ-100 LBS	YES
Toluene 2,6 Diisocyanate	TPQ-100 LBS	RQ-100 LBS	YES

T.S.C.A. Status: On Inventory

=====

Name(print): George C. Karpin      !This formulation is subject  
Signature: *George C. Karpin*      !to change without notice.  
Title: Toxicological Coordinator! In case of accident use the  
Date of last revision 12/29/88! phone number provided.

-----

To the best of our knowledge, the information contained herein is accurate and meets all state and federal guidelines. However, CONAP INC. does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of the suitability of any material is the sole responsibility of the user.

////////////////////////////////////

Date approved 1/13/89 Approved: *W. J. P. [Signature]*

ND=Not Determined

NA=Not Applicable

1/3/89 Approved: *R. A. [Signature]*

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C O N A P I N C .  
1405 Buffalo St.  
Olean, New York 14760  
716/372-9650

## ===== MATERIAL SAFETY DATA SHEET =====

Note: This form is to be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Blank spaces are not permitted.

## ===== I. IDENTIFICATION =====

Trade Name Conathane EN-5 Part A Date: 12/29/88  
Chemical Name, common name: Complex Mixture; Polyurethane  
Prepolymer

## ===== II. HAZARDOUS INGREDIENTS =====

Chemical Names	CAS No.	%	ACGIH(TLV)	OSHA(PEL)	Other
-----					
Toluene 2,4 Diisocyanate	584-84-9	<15%			
		.005ppm TWA		.02ppm	ND

-----  
Material may present a dust hazard if cut, ground or machined after curing.

## ===== III. PHYSICAL DATA =====

Boiling Point ND !Specific Gravity (H2O=1) 1.06  
Vapor Pressure, mm Hg ND !Vapor Density (air=1) ND  
Melting Pt./Range ND !Evaporation rate (Ether=1) ND  
Solubility in Water: REACTS! Physical State: LIQUID  
Percent volatile by volume: Negligible  
Appearance and Odor: Liquid; For TDI Sharp pungent (odor threshold greater than TLV)

## ===== IV. FIRE AND EXPLOSION DATA =====

Flash Point, F (Method): > 260 F PMCC  
Flammable Limits ND LEL ND UEL ND  
Extinguishing Materials:  
-XX-Water Spray -XX-Dry Chemical -XX-Carbon Dioxide  
-XX-Foam -ND-Other:  
Special Firefighting Procedures/Unusual Fire or Explosion Hazards:

Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by fire fighters. No skin surface should be exposed. During a fire TDI vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. At temperatures greater than 350 F TDI forms carbodiimides with the release of CO2 which can cause pressure build-up in closed containers. Explosive rupture is possible. Therefore, use cold water to cool fire-exposed containers.

## ===== V. HEALTH HAZARD INFORMATION =====

ACUTE TOXICITY (Routes of entry)

Inhalation:

LC50.(4 hr.): Range 16-50ppm for 1-4 hr (Rat) on TDI. TDI vapors or mist at concentrations above the TLV can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and

reduced lung function (breathing obstruction). Persons with a preexisting, nonspecific bronchial hyperactivity can respond to concentrations below the TLV with similar symptoms as well as asthma attack. Exposure well above the TLV may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in the lungs). These effects are usually reversible. Chemical or hypersensitive pneumonitis, with flu-like symptoms (e.g. fever, chills), has also been reported. These symptoms can be delayed up to several hours after exposure.

**Ingestion:**

ORAL, LD50 > 5800 mg/kg (Rats). Can result in irritation and corrosive action in the mouth, stomach tissue and digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea.

**Eye Contact:**

Strongly irritating (Rabbits) OECD Guidelines. Liquid, aerosols or vapors are severely irritating and can cause pain, tearing, reddening and swelling. If left untreated, corneal damage can occur and injury is slow to heal. however, damage is usually reversible.

**Skin Contact:**

Skin sensitizer in guinea pigs. One study with guinea pigs reported that repeated skin contact with TDI caused respiratory sensitization. Isocyanates react with skin protein and moisture and can cause irritation which may include the following symptoms: reddening, swelling, rash, scaling or blistering. Cured material is difficult to remove.

**Skin Absorption:**

ND

---

**CHRONIC TOXICITY**

**Carcinogenicity:**

--X-Yes:      --X---NTP      --X----IARC      ----Federal OSHA  
In a DRAFT of a lifetime bioassay, the National Toxicology Program reported that TDI caused an increase in the number of tumors in exposed rats over those counted in non-exposed rats. The TDI was administered by gavage where TDI was introduced into the stomach through a tube. In lifetime inhalation studies conducted by Hazelton Labs for the International Isocyanate Institute, TDI did NOT demonstrate carcinogenic activity in rats or mice.

**Target Organ Affected:**

No specific information available.

**Effects of Overexposure:**

**Inhalation:**

Inhalation of TDI vapors at concentrations above allowable limits can produce irritation of the mucous membranes in the respiratory tract resulting in running nose, sore throat, productive cough and a reduction in lung function (breathing obstruction). As a result of previous repeated overexposures or a single large dose, certain individuals may develop isocyanate sensitization (chemical asthma)

which will cause them to react to a later exposure to isocyanate at levels well below the TLV. Another type of response is hyperreactivity or hypersensitivity, in which persons, (as a result of a previous repeated overexposure or large single dose), can respond to small TDI concentrations at levels well below the .02ppm. Symptoms could be immediate or delayed and include chest tightness, wheezing, cough, shortness of breath or asthmatic attack. Hypersensitivity pneumonitis (with similar respiratory symptoms and fever which has been delayed) has also been reported. Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Chronic overexposure to isocyanate has also been reported to cause lung damage (including decrease in lung function) which may be permanent. Sensitization can either be temporary or permanent.

#### Eyes:

Liquid, vapors or aerosols are severely irritating to the eyes and can cause tears. Prolonged vapor contact may cause conjunctivitis. Corneal injury can occur which can be slow to heal; however damage is usually reversible.

#### Skin:

TDI reacts with skin protein and tissue moisture and can cause localized irritation as well as discoloration. Prolonged contact could produce reddening, swelling, or blistering and, in some individuals, skin sensitization resulting in dermatitis. Once sensitized a individual can develop recurring symptoms as a result of exposure to vapor.

#### Ingestion:

Ingestion could result in irritation and some corrosive action in the mouth, stomach tissue and digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea.

---

#### Medical Conditions Aggravated By Exposure

Asthma, other respiratory disorders (bronchitis, emphysema, bronchial hyperreactivity), skin allergies, eczema.

---

#### FIRST AID: EMERGENCY PROCEDURES

##### Eye Contact:

Flush with clean, lukewarm water (low pressure) for at least 15 minutes, occasionally lifting eyelids, and obtain medical attention. Refer individual to an ophthalmologist for immediate follow-up.

##### Skin Contact:

Remove contaminated clothing. Wash effected areas thoroughly with soap or tincture of green soap and water. Wash contaminated clothing thoroughly before reuse. For severe exposures, get under safety shower, remove clothing under shower, get medical attention, and consult physician.

**Inhalation:**

Move to an area free from risk of further exposure.  
Administer oxygen or artificial respiration as needed.  
Obtain medical attention. Asthmatic-type symptoms may develop and be immediate or delayed up to several hours.  
Consult physician.

**Ingested:**

Do not induce vomiting. Give 12 fl. oz. of milk or water to drink. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. Consult physician.

**Recommendations to Physician:**

Eyes: Stain for evidence of corneal injury. If cornea is burned, instill antibiotic steroid preparation frequently. Workplace vapors have produced reversible corneal epithelial edema impairing vision. This compound is a known skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burns. There is no specific antidote for ingestion treat symptomatically. Inducing vomiting is contraindicated because of the irritating nature of this compound. TDI is a known pulmonary sensitizer. Treatment is essentially symptomatic. An individual having a skin or pulmonary sensitization reaction to this material should be removed from exposure to any isocyanate.

===== VI. REACTIVITY DATA =====

Stability:           --XX--Stable                   -NA--Unstable

Conditions to Avoid: Temperatures higher than recommended in product literature.

Incompatibility (materials to avoid):

Water, short chain alcohols, amines

Hazardous Decomposition Products

By heat and fire: carbon dioxide, carbon monoxide, oxides of nitrogen and traces of hydrogen cyanide, TDI.

Hazardous Polymerization:NA-May Occur    X-Will not occur

Conditions to avoid:

ND

===== VII. SPILL, LEAK AND DISPOSAL PROCEDURES =====

Steps to be taken if material is released or spilled:

Consult section VIII for proper protective equipment.

Cover the spill with sawdust, vermiculite, Fuller's earth or other absorbent material. Pour decontamination solution over the spill area and allow to react for at least 10 minutes. Collect the material in open top containers and add additional amounts of decontamination solution. Remove containers to a safe place, cover loosely, and allow to stand for 24 to 48 hours. Wash down spill area with decontamination solutions. Decontamination solutions: non-ionic surfactant Union Carbide's Tergitol TMN-10(20%) and water (80%); or concentrated ammonia (3-8%), detergent (2%), and water (90%). During spill clean-up, a self contained breathing apparatus or air line respirator and protective clothing must be worn. (See section VIII).

Reportable Quantity CERCLA: 100lbs

Waste Disposal Method:

Dispose according to any Local, State and Federal

Regulations.

===== VIII. SPECIAL HANDLING INFORMATION =====  
Respiratory Protection:

A positive pressure air-supplied respirator is required whenever TDI concentrations exceed the Short-Term Exposure or Ceiling Limit of .02ppm or exceed the 8 hour Time Weighted Average TLV of 0.005 ppm. An air supplied respirator must also be worn during spray application, even if exhaust ventilation is used. For non-spray , short-term(less than 1 hour) situations where concentrations are near the TLV, a full face, air-purifying respirator equipped with organic cartridges or canisters can be used. However, TDI has poor warning properties since the odor at which TDI can be smelled is substantially higher than the 0.02 ppm. Therefore, proper fit and timely replacement of filter elements must be ensured. Observe OSHA regulations for respirator use. (29CFR 1910.134).

Ventilation:

Local exhaust should be used to maintain levels below the TLV whenever TDI containing material is handled, processed, or spray-applied. At normal room temperatures (70 F) TDI levels quickly exceed the TLV unless properly ventilated. Standard reference sources regarding industrial ventilation (e.g.,ACGIH INDUSTRIAL VENTILATION) should be consulted for guidance about adequate ventilation.

Protective Gloves:Chemical resistant gloves (butyl rubber, nitrile rubber, polyvinyl alcohol). However, please note that PVA degrades in water.

Eye Protection:

Liquid chemical goggles or full face shield should be worn. Contact lenses should not be worn.

Other Protective Clothing or Equipment:Safety showers and eyewash stations should be available. Cover as much of exposed skin as possible with appropriate clothing.

Work Practices, hygienic practices

Educate and train employees in safe use of product. Follow all label instructions.

===== IX SPECIAL PRECAUTIONS =====

Handling and Storage:

Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspect.

Other Precautions:

Avoid contact with eyes and skin. Do not breathe the vapors.

===== X ADDITIONAL INFORMATION =====

SARA Title III Requirements:

TDI is on the Extremely Hazardous Substance.

Chemical Name	Section: 302	CERCLA	313
Toluene 2,4 Diisocyanate	TPQ-500 LBS	RQ-100 LBS	YES

T.S.C.A. Status: On Inventory

=====

Name(print):George C. Karpin !This formulation is subject  
Signature: George C. Karpin !to change without notice.  
Title:Toxicological Coordinator!In case of accident use the  
Date of last revision12/29/88!phone number provided.

-----  
To the best of our knowledge, the information contained  
herein is accurate and meets all state and federal  
guidelines. However, CONAP INC. does not assume any liability  
whatsoever for the accuracy or completeness of the  
information contained herein. All materials may present  
unknown hazards and should be used with caution. Although  
certain hazards are described herein, we cannot guarantee  
that these are the only hazards which exist. Final  
determination of the suitability of any material is the  
sole responsibility of the user.

//////////////////////////////////////  
Date approved : 1/3/89 Approved: [Signature]

ND=Not Determined

NA=Not Applicable

1/3/89 Approved: [Signature]



C O N A P I N C .  
1405 Buffalo St.  
Olean, New York 14760  
716/372-9650

## ===== MATERIAL SAFETY DATA SHEET =====

Note: This form is to be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Blank spaces are not permitted.

## ===== I. IDENTIFICATION =====

Trade Name Conathane EN-7 Part A Date: 12/29/88  
Chemical Name, common name: Complex Mixture; Polyurethane  
Prepolymer

## ===== II. HAZARDOUS INGREDIENTS =====

Chemical Names	CAS No.	%	ACGIH(TLV)	OSHA(PEL)	Other
-----					
Toluene 2,4 Diisocyanate	584-84-9	<15%			
		.005ppm TWA		.02ppm	ND

-----  
Material may present a dust hazard if cut, ground or machined after curing.

## ===== III. PHYSICAL DATA =====

Boiling Point ND !Specific Gravity (H2O=1) 1.06  
Vapor Pressure, mm Hg ND !Vapor Density (air=1) ND  
Melting Pt./Range ND !Evaporation rate (Ether=1) ND  
Solubility in Water: REACTS!Physical State: LIQUID  
Percent volatile by volume: Negligible  
Appearance and Odor: Liquid; For TDI Sharp pungent (odor threshold greater than TLV)

## ===== IV. FIRE AND EXPLOSION DATA =====

Flash Point, F (Method): > 260 F PMCC  
Flammable Limits ND LEL ND UEL ND  
Extinguishing Materials:  
-XX-Water Spray -XX-Dry Chemical -XX-Carbon Dioxide  
-XX-Foam -ND-Other:

Special Firefighting Procedures/Unusual Fire or Explosion Hazards:

Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by fire fighters. No skin surface should be exposed. During a fire TDI vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. At temperatures greater than 350 F TDI forms carbodiimides with the release of CO2 which can cause pressure build-up in closed containers. Explosive rupture is possible. Therefore, use cold water to cool fire-exposed containers.

## ===== V. HEALTH HAZARD INFORMATION =====

ACUTE TOXICITY (Routes of entry)

Inhalation:

LC50.(4 hr.): Range 16-50ppm for 1-4 hr (Rat) on TDI. TDI vapors or mist at concentrations above the TLV can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and

reduced lung function (breathing obstruction). Persons with a preexisting, nonspecific bronchial hyperactivity can respond to concentrations below the TLV with similar symptoms as well as asthma attack. Exposure well above the TLV may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in the lungs). These effects are usually reversible. Chemical or hypersensitive pneumonitis, with flu-like symptoms (e.g. fever, chills), has also been reported. These symptoms can be delayed up to several hours after exposure.

**Ingestion:**

ORAL, LD50 > 5800 mg/kg (Rats). Can result in irritation and corrosive action in the mouth, stomach tissue and digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea.

**Eye Contact:**

Strongly irritating (Rabbits) OECD Guidelines. Liquid, aerosols or vapors are severely irritating and can cause pain, tearing, reddening and swelling. If left untreated, corneal damage can occur and injury is slow to heal. however, damage is usually reversible.

**Skin Contact:**

Skin sensitizer in guinea pigs. One study with guinea pigs reported that repeated skin contact with TDI caused respiratory sensitization. Isocyanates react with skin protein and moisture and can cause irritation which may include the following symptoms: reddening, swelling, rash, scaling or blistering. Cured material is difficult to remove.

**Skin Absorption:**

ND

-----  
**CHRONIC TOXICITY**

**Carcinogenicity:**

--X--Yes:      --X---NTP      --X----IARC      ----Federal OSHA

In a DRAFT of a lifetime bioassay, the National Toxicology Program reported that TDI caused an increase in the number of tumors in exposed rats over those counted in non-exposed rats. The TDI was administered by gavage where TDI was introduced into the stomach through a tube. In lifetime inhalation studies conducted by Hazelton Labs for the International Isocyanate Institute, TDI did NOT demonstrate carcinogenic activity in rats or mice.

**Target Organ Affected:**

No specific information available.

**Effects of Overexposure:**

**Inhalation:**

Inhalation of TDI vapors at concentrations above allowable limits can produce irritation of the mucous membranes in the respiratory tract resulting in running nose, sore throat, productive cough and a reduction in lung function (breathing obstruction). As a result of previous repeated overexposures or a single large dose, certain individuals may develop isocyanate sensitization (chemical asthma)

which will cause them to react to a later exposure to isocyanate at levels well below the TLV. Another type of response is hyperreactivity or hypersensitivity, in which persons, (as a result of a previous repeated overexposure or large single dose), can respond to small TDI concentrations at levels well below the .02ppm. Symptoms could be immediate or delayed and include chest tightness, wheezing, cough, shortness of breath or asthmatic attack. Hypersensitivity pneumonitis (with similar respiratory symptoms and fever which has been delayed) has also been reported. Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Chronic overexposure to isocyanate has also been reported to cause lung damage (including decrease in lung function) which may be permanent. Sensitization can either be temporary or permanent.

**Eyes:**

Liquid, vapors or aerosols are severely irritating to the eyes and can cause tears. Prolonged vapor contact may cause conjunctivitis. Corneal injury can occur which can be slow to heal; however damage is usually reversible.

**Skin:**

TDI reacts with skin protein and tissue moisture and can cause localized irritation as well as discoloration. Prolonged contact could produce reddening, swelling, or blistering and, in some individuals, skin sensitization resulting in dermatitis. Once sensitized a individual can develop recurring symptoms as a result of exposure to vapor.

**Ingestion:**

Ingestion could result in irritation and some corrosive action in the mouth, stomach tissue and digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea.

---

**Medical Conditions Aggravated By Exposure**

Asthma, other respiratory disorders (bronchitis, emphysema, bronchial hyperreactivity), skin allergies, eczema.

---

**FIRST AID: EMERGENCY PROCEDURES**

**Eye Contact:**

Flush with clean, lukewarm water (low pressure) for at least 15 minutes, occasionally lifting eyelids, and obtain medical attention. Refer individual to an ophthalmologist for immediate follow-up.

**Skin Contact:**

Remove contaminated clothing. Wash effected areas thoroughly with soap or tincture of green soap and water. Wash contaminated clothing thoroughly before reuse. For severe exposures, get under safety shower, remove clothing under shower, get medical attention, and consult physician.

#### Inhalation:

Move to an area free from risk of further exposure.  
Administer oxygen or artificial respiration as needed.  
Obtain medical attention. Asthmatic-type symptoms may develop and be immediate or delayed up to several hours.  
Consult physician.

#### Ingested:

Do not induce vomiting. Give 12 fl. oz. of milk or water to drink. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. Consult physician.

#### Recommendations to Physician:

Eyes: Stain for evidence of corneal injury. If cornea is burned, instill antibiotic steroid preparation frequently. Workplace vapors have produced reversible corneal epithelial edema impairing vision. This compound is a known skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burns. There is no specific antidote for ingestion treat symptomatically. Inducing vomiting is contraindicated because of the irritating nature of this compound. TDI is a known pulmonary sensitizer. Treatment is essentially symptomatic. An individual having a skin or pulmonary sensitization reaction to this material should be removed from exposure to any isocyanate.

#### ===== VI. REACTIVITY DATA =====

Stability:                   --XX--Stable                   -NA--Unstable

Conditions to Avoid: Temperatures higher than recommended in product literature.

Incompatibility (materials to avoid):

Water, short chain alcohols, amines

Hazardous Decomposition Products

By heat and fire: carbon dioxide, carbon monoxide, oxides of nitrogen and traces of hydrogen cyanide, TDI.

Hazardous Polymerization:NA-May Occur   X-Will not occur

Conditions to avoid:

ND

#### ===== VII. SPILL, LEAK AND DISPOSAL PROCEDURES =====

Steps to be taken if material is released or spilled:

Consult section VIII for proper protective equipment.

Cover the spill with sawdust, vermiculite, Fuller's earth or other absorbent material. Pour decontamination solution over the spill area and allow to react for at least 10 minutes. Collect the material in open top containers and add additional amounts of decontamination solution. Remove containers to a safe place, cover loosely, and allow to stand for 24 to 48 hours. Wash down spill area with decontamination solutions. Decontamination solutions: non-ionic surfactant Union Carbide's Tergitol TMN-10(20%) and water (80%); or concentrated ammonia (3-8%), detergent (2%), and water (90%). During spill clean-up, a self contained breathing apparatus or air line respirator and protective clothing must be worn. (See section VIII).

Reportable Quantity CERCLA: 100lbs

Waste Disposal Method:

Dispose according to any Local, State and Federal

Regulations.

===== VIII. SPECIAL HANDLING INFORMATION =====

Respiratory Protection:

A positive pressure air-supplied respirator is required whenever TDI concentrations exceed the Short-Term Exposure or Ceiling Limit of .02ppm or exceed the 8 hour Time Weighted Average TLV of 0.005 ppm. An air supplied respirator must also be worn during spray application, even if exhaust ventilation is used. For non-spray , short-term(less than 1 hour) situations where concentrations are near the TLV, a full face, air-purifying respirator equipped with organic cartridges or canisters can be used. However, TDI has poor warning properties since the odor at which TDI can be smelled is substantially higher than the 0.02 ppm. Therefore, proper fit and timely replacement of filter elements must be ensured. Observe OSHA regulations for respirator use. (29CFR 1910.134).

Ventilation:

Local exhaust should be used to maintain levels below the TLV whenever TDI containing material is handled, processed, or spray-applied. At normal room temperatures (70 F) TDI levels quickly exceed the TLV unless properly ventilated. Standard reference sources regarding industrial ventilation (e.g., ACGIH INDUSTRIAL VENTILATION) should be consulted for guidance about adequate ventilation.

Protective Gloves: Chemical resistant gloves (butyl rubber, nitrile rubber, polyvinyl alcohol). However, please note that PVA degrades in water.

Eye Protection:

Liquid chemical goggles or full face shield should be worn. Contact lenses should not be worn.

Other Protective Clothing or Equipment: Safety showers and eyewash stations should be available. Cover as much of exposed skin as possible with appropriate clothing.

Work Practices, hygienic practices

Educate and train employees in safe use of product. Follow all label instructions.

===== IX SPECIAL PRECAUTIONS =====

Handling and Storage:

Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspect.

Other Precautions:

Avoid contact with eyes and skin. Do not breathe the vapors.

===== X ADDITIONAL INFORMATION =====

SARA Title III Requirements:

TDI is on the Extremely Hazardous Substance.

Chemical Name	Section: 302	CERCLA	313
Toluene 2,4 Diisocyanate	TPQ-500 LBS	RQ-100 LBS	YES

T.S.C.A. Status: On Inventory

=====

Name(print):George C. Karpin !This formulation is subject  
Signature: George C. Karpin !to change without notice.  
Title:Toxicological Coordinator!In case of accident use the  
Date of last revision12/29/88!phone number provided.

-----  
To the best of our knowledge, the information contained  
herein is accurate and meets all state and federal  
guidelines. However, CONAP INC. does not assume any liability  
whatsoever for the accuracy or completeness of the  
information contained herein. All materials may present  
unknown hazards and should be used with caution. Although  
certain hazards are described herein, we cannot guarantee  
that these are the only hazards which exist. Final  
determination of the suitability of any material is the  
sole responsibility of the user.

////////////////////////////////////  
Date approved 113 189 Approved: Will Patten

ND=Not Determined

NA=Not Applicable

1/3/89 Approved: D. A. Williamson

RECEIVED MAY 26 1989

MORTON THIOKOL, INC.  
MORTON CHEMICAL DIVISION  
333 WEST WACKER DRIVE  
CHICAGO, IL 60606-1292

MATERIAL SAFETY DATA SHEET  
DOCUMENT PREPARED: 02/24/89  
PRODUCT: SOLITHANE 113  
PAGE 1

SECTION 1: PRODUCT INFORMATION

PRODUCT NAME: SOLITHANE 113

EFFECTIVE DATE: 02/24/89

CHEMICAL NAME: Isocyanate Terminated Polyol

SUPERCEDES: 12/87

PRODUCT USE: Coatings and Castings

EMERGENCY PHONE: (815)338-1800  
(24 hours/day)

OTHER INFORMATION PHONE: (312)807-3421

SECTION 2: HAZARDOUS INGREDIENTS

CHEMICAL NAME/COMMON NAME	% [1]	CAS NO.	OSHA PEL	ACGIH TLV	OTHER
*Toluene Diisocyanate/ TDI	6-7	584-84-9	0.02 ppm [2]	0.005 ppm	TLV-STEL - 0.02 ppm

SECTION 3: PHYSICAL DATA [1]

% NON-VOLATILES: 93

VAPOR DENSITY (Air = 1): > 6

pH: Not Applicable

BOILING POINT: 482 F (250 C) @ 760 mm Hg

VAPOR PRESSURE: Not Applicable

SOLUBILITY IN WATER: Not Applicable

SPECIFIC GRAVITY (water = 1): 1.073

EVAPORATION RATE (nBUOAc = 1): < 1

APPEARANCE AND ODOR: Pale Yellow; Irritating Pungent Odor

SECTION 4: FIRE AND EXPLOSION HAZARDS

FLASH POINT: > 200 F (94 C)

FLAMMABLE LIMITS:

METHOD USED: Setaflash

LEL: Not Applicable

UEL: Not Applicable

[1] Typical amount, not a specification.

[2] Governed by a ceiling limit value (C) - The value which should not be exceeded during any part of the working exposure.

EXTINGUISHING MEDIA: Use foam, dry chemical.

SPECIAL FIRE FIGHTING PROCEDURES: Full emergency equipment with NIOSH/MSHA approved self-contained full-face positive pressure breathing apparatus should be worn.

UNUSUAL FIRE AND EXPLOSION HAZARDS: None known.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide, oxides of nitrogen, possibly aromatic amines, aldehydes, ammonia, and small amounts of hydrogen cyanide under burning conditions.

SECTION 5: HEALTH HAZARD DATA

ORAL TOXICITY:

Unknown for product mixture. Animal experiments indicate that the toxic effects of TDI or polymeric isocyanates when ingested are slight. The LD50 in rats for TDI is 5840 mg/kg. From these experiments, it is believed that ingestion of TDI or polymeric isocyanates would not be fatal to humans, but could result in irritation and corrosive action on the mouth and stomach tissue.

TDI: orl-rat: LD50: 5800 mg/kg (R.T.E.C.S. No. CZ 6300000)

SECTION 5: HEALTH HAZARD DATA, continued

DERMAL TOXICITY:

Unknown for product mixture. Isocyanates react with skin protein and tissue moisture. If not promptly removed, liquid spills on the skin can cause reddening, swelling, and blistering of the exposed skin. REPEATED SKIN CONTACT HAS CAUSED SKIN SENSITIZATION IN HUMANS AND SHOULD BE AVOIDED.

TDI: skn-rbt: 500 mg/24H MOD

EYE:

Unknown for product mixture. EYE CONTACT - LIQUID ISOCYANATES SPLASHED INTO THE EYES CAN BE HARMFUL TO THE DELICATE EYE TISSUE AND MUST BE AVOIDED. Injury results from reaction of the isocyanate with the eye fluid which may dehydrate the tissue and result in severe irritation of the eyelid and possible damage to the cornea (corneal opacity). Exposure to high concentrations of isocyanate vapor can lead to formation of solid crystals in the eye fluid causing mechanical irritation of the eyes hours after exposure.

TDI: eye-rbt: 100 mg SEV

INHALATION TOXICITY:

Unknown for product mixture. Inhalation of isocyanate vapors can produce severe irritation of the mucous membranes in the respiratory tract, i.e. nose, throat, and lungs. Exposure of humans to concentrations of isocyanate vapor in excess of the maximum acceptable concentration has caused illness characterized by breathlessness, chest discomfort and reduced pulmonary function. Massive exposure to high concentrations has caused, within minutes, irritation of the trachea and larynx and severe coughing spasms. Massive exposure may also lead to bronchitis, bronchial spasm, and/or pulmonary edema (chemical pneumonitis). Concentrations of isocyanate vapors should be maintained below the TLV by engineering controls. Can cause sensitization in humans.

TDI: ihl-hmn: TCLo: 0.02 ppm/2Y:PUL  
ihl-hmn: TCLo: 0.5 ppm:IRR

References: N.I.O.S.H. - R.T.E.C.S., 1982.  
Sax: Dangerous Properties of Industrial Materials (1984)

CHRONIC TOXICITY:

Unknown for product mixture. Toluene diisocyanate (TDI) is considered a suspect carcinogen as tested by National Toxicology Program, 1983, in rats and female mice. Administered by gavage to rats, TDI caused subcutaneous neoplasms or cancers in both sexes. Additionally, males developed pancreatic neoplasms and females, pancreatic, liver and mammary neoplasms. In mice similarly exposed, TDI caused circulatory neoplasms and cancers (combined) and liver neoplasms in females but was not carcinogenic to males. (NTP 1983 Program Tech Report on Carcinogenic Study of Commercial Grade of TDI.)

EFFECTS OF OVEREXPOSURE:

INGESTION:

Unknown for product mixture. May cause gastrointestinal irritation, nausea, drowsiness, and possibly unconsciousness.

SKIN CONTACT:

Unknown for product mixture. Repeated or prolonged contact may cause skin dryness, redness, swelling and dermatitis. Isocyanate sensitization is possible.



SECTION 5: HEALTH HAZARD DATA, continued

EYE CONTACT:

Unknown for product mixture. Vapor and liquid are severe eye irritants. May produce severe eye irritation and corneal edema.

INHALATION:

Unknown for product mixture. Vapors are severe nasal and respiratory irritants. High exposure to the solvent vapors may result in headache, narcotic effect, and unconsciousness. Asthmatic-type symptoms may develop as a reaction to residual isocyanate monomers.

ACUTE SYSTEMIC EFFECTS:

May cause irritation of the eyes, nose and throat. Severe overexposure may cause weakness, drowsiness and unconsciousness.

CHRONIC SYSTEMIC EFFECTS:

Signs and symptoms from chronic exposure resemble those from acute mishaps but are in part systemically more severe. Extended exposure to isocyanate vapors may cause sensitization resulting in asthmatic symptoms.

NOTES:

Medical conditions generally recognized as being aggravated by exposure:

- Toxicity testing on the product mixture has not been conducted. Comments in SECTION V pertain only to the constituent(s) listed in SECTION II.
- Persons with pre-existing skin disorders may be more susceptible to the effects of the isocyanate.
- In persons with impaired pulmonary function, especially those with obstructive airway diseases, the breathing of isocyanate vapors might cause exacerbation of symptoms due to irritant properties. Individuals with pre-existing pulmonary problems such as asthma may also be more susceptible to the isocyanate.

SECTION 6: EMERGENCY HEALTH AND FIRST AID PROCEDURES

EYE CONTACT: May cause eye irritation and if not removed immediately can produce burns. Immediately rinse eyes with constant stream of fresh water for 15 minutes, lifting upper and lower eyelids frequently. Consult a physician immediately.

SKIN CONTACT: Remove contaminated clothing and wash exposed skin thoroughly with warm water and soap. If irritation is present after washing, get medical attention.

INHALATION: Remove exposed person to fresh air. If breathing has stopped perform artificial respiration. Keep the affected person warm and at rest. Get medical attention immediately.

INGESTION: DO NOT induce vomiting. Obtain medical attention immediately, if unavailable contact nearest Poison Control Center. Keep affected person warm and at rest.

NOTE TO PHYSICIAN: Supportive therapy is recommended. No known antidote. Careful lavage may be indicated after ingestion.

SECTION 7: REACTIVITY DATA

STABLE OR UNSTABLE:

Stable under normal conditions of usage.

CONDITIONS TO AVOID:

Storage at temperatures above 110 F and moisture contact.

INCOMPATIBLE SUBSTANCES:

Oxidizing substances.

CAN HAZARDOUS POLYMERIZATION OCCUR:

Will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS AND CONDITIONS:

Carbon monoxide, carbon dioxide, oxides of nitrogen, possibly aromatic amines, aldehydes, ammonia, and small amounts of hydrogen cyanide under burning conditions.

SECTION 8: SPILL AND LEAK PROCEDURES

RESPONSE TO SPILLS:

Stop discharge and contain spill or contaminated material using dike, barrier, or other means. Recover with pumping equipment, vacuum truck, sorbents or by other means. Neutralize by soaking with 5% ammonia solution or water with 10% isopropanol. Open containers should not be closed for disposal until all foaming or bubbling has stopped. Place material in suitable containers for further handling.

HAZARDS TO BE AVOIDED:

Do not flush to stream, other bodies of water or sewer unless authorized. Avoid contact with skin or clothing. Other hazards see Section Nos. IV (Fire and Explosion Data), V (Health Hazard Data), and IX (Control Measures).

SPILL NOTIFICATION:

This product contains one or more hazardous substances as listed in 40 CFR 302.4, which, if released into the environment in a quantity equal to or greater than the reportable quantity, must immediately be reported to the National Response Center (NRC), Telephone No. 1-800-424-8802. Check Federal, State and local reporting regulations.

DISPOSAL METHODS:

- (a) Recycle, if feasible.
- (b) Incinerate in authorized facility.
- (c) Treatment at Industrial or Liquid Waste treatment facility.
- (d) Landfill in authorized facility. (Solidification or fixation may be required prior to landfill disposal.)

NOTES:

THIS MATERIAL IF BEING DISCARDED DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

SECTION 9: CONTROL MEASURES

RESPIRATORY PROTECTION:

Use NIOSH/MSHA approved respiratory protection within equipment limitations. Consult OSHA 29 CFR, 1910.134, Respiratory Protection. S.C.B.A. or air line respirators may be required for protection against the isocyanate. An Industrial Hygienist should be consulted to aid in this determination and for consultation regarding respirator selection, use and training.

OTHER PROTECTIVE EQUIPMENT:

FOR HANDS AND BODY:

Chemical resistant gloves are recommended for hand protection. Work clothing for general body protection and other protective clothing as necessary to prevent repeated or prolonged skin contact.

FOR EYES:

Safety glasses, face shields (eight-inch minimum) or splash-proof chemical goggles in addition to safety glasses during pouring and dispensing or where other eye hazards exist.

OTHER:

- Use under well-ventilated conditions.
- For personal hygiene protection we recommend that employees wash thoroughly after handling product. Always wash-up before eating, drinking, smoking or using restroom facilities.
- Properly bond and ground all containers during pouring, dispensing and mixing operations to minimize the static charge buildup.

VENTILATION:

Exhaust ventilation at all vapor release points is recommended to maintain vapors below lowest TLV of substance in mixture.

SECTION 10: SPECIAL PRECAUTIONS

RECOMMENDED STORAGE PRACTICE AND CONDITIONS:

Store between 50 and 100 F in dry area. Storage at higher temperatures causes polymerization.

SECTION 10: SPECIAL PRECAUTIONS, continued

OTHER PRECAUTIONS:

For industrial use only. Use with adequate ventilation. Avoid skin contact. Eyewash and shower should be available. Always wash-up after handling and before eating, drinking, smoking or using restroom facilities.

SECTION 11: LABELING INFORMATION

DOT SHIPPING NAME: Non-Regulated  
DOT LABEL: Not Applicable  
DOT IDENTIFICATION NO.: Not Applicable  
MORTON PRECAUTIONARY LABEL NO.: L177

SECTION 12: REGULATORY INFORMATION

SARA TITLE III, SECTION 313 REQUIREMENTS:

Substances identified with an asterisk in SECTION 2 - HAZARDOUS INGREDIENTS, are toxic chemicals under Section 313. If no material is identified with an asterisk, then this product contains no substance reportable under this notification requirement.

SECTION 13: USERS RESPONSIBILITY

A BULLETIN SUCH AS THIS CANNOT BE EXPECTED TO COVER ALL POSSIBLE INDIVIDUAL SITUATIONS. AS THE USER HAS THE RESPONSIBILITY TO PROVIDE A SAFE WORKPLACE, ALL ASPECTS OF AN INDIVIDUAL OPERATION SHOULD BE EXAMINED TO DETERMINE IF, OR WHERE, PRECAUTIONS - IN ADDITION TO THOSE DESCRIBED HEREIN - ARE REQUIRED. ANY HEALTH HAZARD AND SAFETY INFORMATION CONTAINED HEREIN SHOULD BE PASSED ON TO YOUR CUSTOMERS OR EMPLOYEES, AS THE CASE MAY BE. MORTON THIOKOL, INC. MUST RELY ON THE USER TO UTILIZE THE INFORMATION WE HAVE SUPPLIED TO DEVELOP WORK PRACTICE GUIDELINES AND EMPLOYEE INSTRUCTIONAL PROGRAMS FOR THE INDIVIDUAL OPERATION.

DISCLAIMER OF LIABILITY

The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. Users of any chemical should satisfy themselves that the conditions and methods of use assure that the chemical is used safely. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO THE INFORMATION CONTAINED HEREIN OR THE CHEMICAL TO WHICH THE INFORMATION REFERS. It is the responsibility of the user to comply with all applicable Federal, State and local laws and regulations.

Nothing contained herein is to be construed as a recommendation for use in violation of any patents or of applicable laws or regulations.

INITIALS: DBW:PSF - Chicago  
SKF:mes - Woodstock

COMMONWEALTH OF PENNSYLVANIA ADDENDUM TO  
MATERIAL SAFETY DATA SHEET

SOLITHANE 113

All of the materials in this product that are required by the Commonwealth of Pennsylvania to be identified are either listed below or in SECTION 2 of the Material Safety Data Sheet. In addition, some of the materials identified may have been placed by the Commonwealth of Pennsylvania on their Hazardous Substance List.

<u>INGREDIENTS</u>	<u>CAS NUMBER</u>	<u>WEIGHT %</u>
Isocyanate Terminated Polyol	Proprietary	93-94

The specific chemical identity of any substance not identified with a Chemical Abstracts Service Number is being withheld as a trade secret.

MSDS EFFECTIVE DATE: 02/24/89  
ADDENDUM EFFECTIVE DATE: 02/24/89

SKF:mes

# **MATERIAL SAFETY DATA SHEET**

## **1. PRODUCT IDENTIFICATION**

TRADE NAME: Ablebond 724-1

CHEMICAL NAMES: Polyurethane

MANUFACTURER'S NAME: ABLESTIK LABORATORIES

ADDRESS: 833 West 182nd Street, Gardena, CA 90248 (213) 532-9341

REVISION DATE: 11/30/88

## **II HAZARDOUS INGREDIENTS**

<u>CHEMICAL NAMES</u>	<u>CAS NUMBERS</u>	<u>PERCENT</u>	<u>EXPOSURE LIMIT</u>	
			<u>ACGIH(TWA)</u>	<u>OSHA(PEL)</u>
Toluene diisocyanate	584-84-9	< 0.3	0.005ppm	0.02ppm

TDI is a NTP anticipated human carcinogen. TDI was found to be carcinogenic in mice and rats by gavage in corn oil. Six hours daily of inhalation exposure to rats and mice of 0.05 and 0.15 ppm of TDI for 2 years did not produce an increase tumor incidence. Based on the usual route of TDI exposure, i.e. inhalation, the carcinogenic potential of TDI to human has not yet been determined.

## **III PHYSICAL PROPERTIES**

VAPOR DENSITY (AIR=1): Not available

MELTING POINT(°F): Not applicable

SPECIFIC GRAVITY: 1.1

BOILING POINT (°F): Not available

SOLUBILITY IN WATER: Reacts with water

PERCENT VOLATILE BY VOLUME: Not determined

VAPOR PRESSURE, mm Hg at 20°C: Not determined

EVAPORATION RATE ( ETHER =1): Slower than ether

APPEARANCE AND ODOR: Honey colored liquid; pungent odor

## **IV FIRE AND EXPLOSION**

FLASH POINT, °F (GIVE METHOD): 350° (CC)

AUTOIGNITION TEMPERATURE: Not determined

FLAMMABLE LIMITS IN AIR, VOLUME %: LOWER Not determined UPPER Not determined

FIRE EXTINGUISHING MATERIALS: Dry chemical, water spray.

FIRE EXTINGUISHING PROCEDURES: Wear self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Protect against inhalation of cyanate vapors and other decomposition/combustion products.

## **V HEALTH HAZARD INFORMATION**

### **SYMPTOMS OF OVEREXPOSURE FOR EACH POTENTIAL ROUTE OF EXPOSURE**

INHALED: Repeated inhalation of minimal amounts of vapor can cause respiratory sensitization and asthma.

CONTACT WITH SKIN: Will cause irritation. Repeated , minimal contact may cause dermatitis, sensitization.

CONTACT WITH EYES: Exposure to vapor can cause irritation to eyes.

ABSORBED THROUGH SKIN: Absorption through skin may be harmful.

SWALLOWED: Oral LD50(rats) for TDI : 5,800 mg/kg

### **HEALTH EFFECTS OR RISKS FROM EXPOSURE:**

ACUTE: See symptoms of overexposure, section V.

CHRONIC: Toluene diisocyanate is considered to be carcinogenic by NTP. See Section II.

### **FIRST AID: EMERGENCY PROCEDURE**

EYE CONTACT: Flush with water for at least 15 minutes. Seek medical attention.

SKIN CONTACT: Wash immediately with soap and water. If irritation persists, seek medical attention immediately

INHALED: Remove to fresh air immediately.

INGESTION: Seek medical attention immediately and show the insert card.

**SUSPECTED CANCER AGENT?** Toluene diisocyanate is considered to be carcinogenic by NTP.

## VI REACTIVITY DATA

STABILITY: ☒ STABLE ☐ UNSTABLE

CONDITIONS TO AVOID: Heat prior to cure.

INCOMPATIBILITY (MATERIALS TO AVOID): Moisture, strong oxidizing agents

HAZARDOUS DECOMPOSITION PRODUCTS (INCLUDING COMBUSTION PRODUCTS):

Substituted anilines, carbon monoxide, and oxides of nitrogen.

HAZARDOUS POLYMERIZATION: ☐ MAY OCCUR ☒ WILL NOT OCCUR

CONDITIONS TO AVOID: None known

## VII SPILL, LEAK AND DISPOSAL

SPILL RESPONSE PROCEDURES: Wipe up with solvent saturated toweling and collect in an appropriate container for disposal.

PREPARING WASTES FOR DISPOSAL: Dispose in approved chemical disposal area or in a manner which complies with all local, state and federal regulations.

## VIII SPECIAL HANDLING INFORMATION

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation. Local exhaust is recommended when appropriate to control employees' exposure.

RESPIRATORY PROTECTION: The use of a NIOSH approved mask for toxic dust is required if cured product is to be dry sanded or ground.

EYE PROTECTION: Safety goggles with side shields.

GLOVES: Rubber

OTHER CLOTHING AND EQUIPMENT: Protective equipment to cover exposed areas.

WORK PRACTICES, HYGIENIC PRACTICES: Vent curing oven to outdoors.

OTHER HANDLING AND STORAGE REQUIREMENTS: Store frozen at all times.

PROTECTIVE MEASURES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT:

Avoid contact with skin, eyes and clothing. Good housekeeping is required. Avoid inhalation of vapors.

## IX REGULATORY INFORMATION

SARA/TITLE III - TOXIC CHEMICALS LIST:

This product contains chemicals subject to the reporting requirements of section 313 of Title III of Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

< 0.3

584-84-9

Toluene diisocyanate

TSCA INVENTORY STATUS:

Chemical components listed on TSCA Inventory

CALIFORNIA PROPOSITION 65:

This product does not contain toxic chemicals currently on the California List of known carcinogens and reproductive toxins.

**DISCLAIMER:** THE INFORMATION GIVEN AND THE RECOMMENDATIONS MADE HEREIN APPLY TO OUR PRODUCT(S) ALONE AND NOT IN COMBINATION WITH ANY OTHER PRODUCT(S). SUCH INFORMATION AND RECOMMENDATIONS ARE BASED ON OUR RESEARCH AND ON DATA FROM OTHER RELIABLE SOURCES AND ARE BELIEVED TO BE ACCURATE BUT NO GUARANTEE OF THEIR ACCURACY IS MADE. IN EVERY CASE WE URGE AND RECOMMEND THAT PURCHASERS BEFORE USING ANY PRODUCT MAKE THEIR OWN TESTS TO VERIFY THIS DATA UNDER THEIR OWN OPERATING CONDITIONS AND TO DETERMINE TO THEIR OWN SATISFACTION WHETHER THE PRODUCT IS SUITABLE FOR THEIR PARTICULAR PURPOSES. THE PRODUCT(S) DISCUSSED HEREIN ARE SOLD WITHOUT ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED.

# MATERIAL SAFETY DATA SHEET

## 1. PRODUCT IDENTIFICATION

TRADE NAME: Ablebond 724-9

CHEMICAL NAMES: Polyurethane

MANUFACTURER'S NAME: ABLESTIK LABORATORIES

ADDRESS: 833 West 182nd Street, Gardena, CA 90248 (213) 532-9341

REVISION DATE: 04/07/89

## II HAZARDOUS INGREDIENTS

<u>CHEMICAL NAMES</u>	<u>CAS NUMBERS</u>	<u>PERCENT</u>	<u>EXPOSURE LIMIT</u>	
			<u>ACGIH(TWA)</u>	<u>OSHA(PEL)</u>
Cyclohexanone	108-94-1	< 20	25ppm	50ppm
Toluene diisocyanate	584-84-9	< 0.3	0.005ppm	0.02ppm

TDI is a NTP anticipated human carcinogen. TDI was found to be carcinogenic in mice and rats by gavage in corn oil. Six hours daily of inhalation exposure to rats and mice of 0.05 and 0.15 ppm of TDI for 2 years did not produce an increase tumor incidence. Based on the usual route of TDI exposure, i.e. inhalation, the carcinogenic potential of TDI to human has not yet been determined.

## III PHYSICAL PROPERTIES

VAPOR DENSITY (AIR=1): 3.4 for cyclohexanone

MELTING POINT(°F): Not applicable

SPECIFIC GRAVITY: 1.0

BOILING POINT (°F): 314° for cyclohexanone

SOLUBILITY IN WATER: Reacts with water

PERCENT VOLATILE BY WEIGHT: < 20

VAPOR PRESSURE, mm Hg at 20°C: 2 for cyclohexanone

EVAPORATION RATE ( BUTYL ACETATE=1): 0.38 for cyclohexanone

APPEARANCE AND ODOR: Amber liquid; acetone-like odor

## IV FIRE AND EXPLOSION

FLASH POINT, °F (GIVE METHOD): 111° for cyclohexanone (CC)

AUTOIGNITION TEMPERATURE: 788°F for cyclohexanone

FLAMMABLE LIMITS IN AIR FOR CYCLOHEXANONE, VOLUME %: LOWER 1.1 UPPER 9.4

FIRE EXTINGUISHING MATERIALS: Dry chemical, carbon dioxide or foam.

FIRE EXTINGUISHING PROCEDURES: Wear self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Protect against inhalation of cyanate vapors and other decomposition/combustion products.

## V HEALTH HAZARD INFORMATION

### SYMPTOMS OF OVEREXPOSURE FOR EACH POTENTIAL ROUTE OF EXPOSURE

INHALED: Can cause irritation to lungs, mucous membranes and respiratory systems. Repeated inhalation of minimal amounts of vapor can cause respiratory sensitization and asthma.

CONTACT WITH SKIN: Will cause irritation. Repeated, minimal contact may cause dermatitis, sensitization.

CONTACT WITH EYES: Exposure to vapor can cause irritation to eyes.

ABSORBED THROUGH SKIN: Absorption through skin may be harmful.

SWALLOWED: Unknown for the mixture; however, moderate potential for oral toxicity is expected.

### HEALTH EFFECTS OR RISKS FROM EXPOSURE:

ACUTE: See symptoms of overexposure, section V. Oral LD50(rats) for TDI : 5,800 mg/kg

CHRONIC: Toluene diisocyanate is considered to be carcinogenic by NTP. See Section II.

### FIRST AID: EMERGENCY PROCEDURE

EYE CONTACT: Flush with water for at least 15 minutes. Seek medical attention.

SKIN CONTACT: Wash immediately with soap and water. If irritation persists, seek medical attention immediately

INHALED: Remove to fresh air immediately.

INGESTION: Seek medical attention immediately and show the insert card.

**SUSPECTED CANCER AGENT?** Toluene diisocyanate is considered to be carcinogenic by NTP.

#### VI REACTIVITY DATA

STABILITY: ☒ STABLE ☐ UNSTABLE

CONDITIONS TO AVOID: Heat prior to cure.

INCOMPATIBILITY (MATERIALS TO AVOID): Moisture, strong oxidizing agents

HAZARDOUS DECOMPOSITION PRODUCTS (INCLUDING COMBUSTION PRODUCTS):

Substituted anilines, carbon monoxide, and oxides of nitrogen.

HAZARDOUS POLYMERIZATION: ☐ MAY OCCUR ☒ WILL NOT OCCUR

CONDITIONS TO AVOID: None known

#### VII SPILL, LEAK AND DISPOSAL

SPILL RESPONSE PROCEDURES: Wipe up with solvent saturated toweling and collect in an appropriate container for disposal.

PREPARING WASTES FOR DISPOSAL: Dispose in approved chemical disposal area or in a manner which complies with all local, state and federal regulations.

#### VIII SPECIAL HANDLING INFORMATION

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation. Local exhaust is recommended when appropriate to control employees' exposure.

RESPIRATORY PROTECTION: Contaminant levels will vary dependent on the operation. Use NIOSH approved organic vapor respirator as needed.

zEYE PROTECTION: Safety goggles with side shields.

GLOVES: Rubber

OTHER CLOTHING AND EQUIPMENT: Protective equipment to cover exposed areas.

WORK PRACTICES, HYGIENIC PRACTICES: Vent curing oven to outdoors.

OTHER HANDLING AND STORAGE REQUIREMENTS: Store frozen at all times.

PROTECTIVE MEASURES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT:

Avoid contact with skin, eyes and clothing. Good housekeeping is required. Avoid inhalation of vapors.

#### IX REGULATORY INFORMATION

SARA/TITLE III - TOXIC CHEMICALS LIST:

This product contains chemicals subject to the reporting requirements of section 313 of Title III of Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

< 0.3

584-84-9

Toluene diisocyanate

TSCA INVENTORY STATUS:

Chemical components listed on TSCA Inventory

CALIFORNIA PROPOSITION 65:

This product does not contain toxic chemicals currently on the California List of known carcinogens and reproductive toxins.

**DISCLAIMER:** THE INFORMATION GIVEN AND THE RECOMMENDATIONS MADE HEREIN APPLY TO OUR PRODUCT(S) ALONE AND NOT IN COMBINATION WITH ANY OTHER PRODUCT(S). SUCH INFORMATION AND RECOMMENDATIONS ARE BASED ON OUR RESEARCH AND ON DATA FROM OTHER RELIABLE SOURCES AND ARE BELIEVED TO BE ACCURATE BUT NO GUARANTEE OF THEIR ACCURACY IS MADE. IN EVERY CASE WE URGE AND RECOMMEND THAT PURCHASERS BEFORE USING ANY PRODUCT MAKE THEIR OWN TESTS TO VERIFY THIS DATA UNDER THEIR OWN OPERATING CONDITIONS AND TO DETERMINE TO THEIR OWN SATISFACTION WHETHER THE PRODUCT IS SUITABLE FOR THEIR PARTICULAR PURPOSES. THE PRODUCT(S) DISCUSSED HEREIN ARE SOLD WITHOUT ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED.



# **MATERIAL SAFETY DATA SHEET**

## **1. PRODUCT IDENTIFICATION**

TRADE NAME: Ablebond 724-10

CHEMICAL NAMES: Polyurethane - Cyclohexanone

MANUFACTURER'S NAME: ABLESTIK LABORATORIES

ADDRESS: 833 West 182nd Street, Gardena, CA 90248 (213) 532-9341

REVISION DATE: 01/27/89

## **II HAZARDOUS INGREDIENTS**

<u>CHEMICAL NAMES</u>	<u>CAS NUMBERS</u>	<u>PERCENT</u>	<u>EXPOSURE LIMIT</u>	
			<u>ACGIH(TWA)</u>	<u>OSHA(PEL)</u>
Cyclohexanone	108-94-1	< 35	25ppm	50ppm
Toluene diisocyanate	584-84-9	< 0.2	0.005ppm	0.02ppm

TDI is a NTP anticipated human carcinogen. TDI was found to be carcinogenic in mice and rats by gavage in corn oil. Six hours daily of inhalation exposure to rats and mice of 0.05 and 0.15 ppm of TDI for 2 years did not produce an increase tumor incidence. Based on the usual route of TDI exposure, i.e. inhalation, the carcinogenic potential of TDI to human has not yet been determined.

## **III PHYSICAL PROPERTIES**

VAPOR DENSITY (AIR=1): Not available

MELTING POINT(°F): Not applicable

SPECIFIC GRAVITY: 1.0

BOILING POINT (°F): Not available

SOLUBILITY IN WATER: Reacts with water

PERCENT VOLATILE BY WEIGHT: < 35

VAPOR PRESSURE, mm Hg at 20°C: 2 for cyclohexanone

EVAPORATION RATE (BUTYL ACETATE =1): 0.224 for cyclohexanone

APPEARANCE AND ODOR: Amber, translucent thin liquid; pungent odor

## **IV FIRE AND EXPLOSION**

FLASH POINT, °F (GIVE METHOD): 116° (TOC) for cyclohexanone

AUTOIGNITION TEMPERATURE: Not determined

FLAMMABLE LIMITS IN AIR FOR CYCLOHEXANONE, VOLUME %: LOWER 1.1 @ 212°F UPPER 8.6

FIRE EXTINGUISHING MATERIALS: Dry chemical, water spray.

FIRE EXTINGUISHING PROCEDURES: Wear self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Protect against inhalation of cyanate vapors and other decomposition/combustion products.

## **V HEALTH HAZARD INFORMATION**

### **SYMPTOMS OF OVEREXPOSURE FOR EACH POTENTIAL ROUTE OF EXPOSURE**

INHALED: Repeated inhalation of minimal amounts of vapor can cause respiratory sensitization and asthma.

CONTACT WITH SKIN: Will cause irritation. Repeated, minimal contact may cause dermatitis, sensitization. Dermal LD50(rbt): 1000 mg/kg for cyclohexanone

CONTACT WITH EYES: Exposure to vapor can cause irritation to eyes.

ABSORBED THROUGH SKIN: Absorption through skin may be harmful.

SWALLOWED: Unknown for the mixture, however, moderate potential for oral toxicity is expected. Oral LD50(rats) for TDI : 5,800 mg/kg. Oral LD50(rat): 1620 mg/kg for cyclohexanone

### **HEALTH EFFECTS OR RISKS FROM EXPOSURE:**

ACUTE: See symptoms of overexposure, section V.

CHRONIC: Toluene diisocyanate is considered to be carcinogenic by NTP. See Section II.

### **FIRST AID: EMERGENCY PROCEDURE**

EYE CONTACT: Flush with water for at least 15 minutes. Seek medical attention.

SKIN CONTACT: Wash immediately with soap and water. If irritation persists, seek medical attention immediately

INHALED: Remove to fresh air immediately.

INGESTION: Seek medical attention immediately and show the insert card.

**SUSPECTED CANCER AGENT?** Toluene diisocyanate is considered to be carcinogenic by NTP.

#### VI REACTIVITY DATA

STABILITY: ☒ STABLE ☐ UNSTABLE

CONDITIONS TO AVOID: Heat prior to cure.

INCOMPATIBILITY (MATERIALS TO AVOID): Moisture, strong oxidizing agents

HAZARDOUS DECOMPOSITION PRODUCTS (INCLUDING COMBUSTION PRODUCTS):

Substituted anilines, carbon monoxide, oxides of nitrogen and other toxic fumes.

HAZARDOUS POLYMERIZATION: ☐ MAY OCCUR ☒ WILL NOT OCCUR

CONDITIONS TO AVOID: None known

#### VII SPILL, LEAK AND DISPOSAL

SPILL RESPONSE PROCEDURES: Wipe up with solvent saturated toweling and collect in an appropriate container for disposal.

PREPARING WASTES FOR DISPOSAL: Dispose in approved chemical disposal area or in a manner which complies with all local, state and federal regulations.

#### VIII SPECIAL HANDLING INFORMATION

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation. Local exhaust is recommended when appropriate to control employees' exposure.

RESPIRATORY PROTECTION: Contaminant levels will vary dependent on the operation. Use NIOSH approved organic vapor respirator as needed.

EYE PROTECTION: Safety goggles with side shields.

GLOVES: Rubber

OTHER CLOTHING AND EQUIPMENT: Protective equipment to cover exposed areas.

WORK PRACTICES, HYGIENIC PRACTICES: Vent curing oven to outdoors.

OTHER HANDLING AND STORAGE REQUIREMENTS: Store frozen at all times.

PROTECTIVE MEASURES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT:

Avoid contact with skin, eyes and clothing. Good housekeeping is required. Avoid inhalation of vapors.

#### IX REGULATORY INFORMATION

SARA/TITLE III - TOXIC CHEMICALS LIST:

This product contains chemicals subject to the reporting requirements of section 313 of Title III of Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

< 0.2%

584-84-9

Toluene diisocyanate

TSCA INVENTORY STATUS:

Chemical components listed on TSCA Inventory

CALIFORNIA PROPOSITION 65:

This product does not contain toxic chemicals currently on the California List of known carcinogens and reproductive toxins.

**DISCLAIMER:** THE INFORMATION GIVEN AND THE RECOMMENDATIONS MADE HEREIN APPLY TO OUR PRODUCT(S) ALONE AND NOT IN COMBINATION WITH ANY OTHER PRODUCT(S). SUCH INFORMATION AND RECOMMENDATIONS ARE BASED ON OUR RESEARCH AND ON DATA FROM OTHER RELIABLE SOURCES AND ARE BELIEVED TO BE ACCURATE BUT NO GUARANTEE OF THEIR ACCURACY IS MADE. IN EVERY CASE WE URGE AND RECOMMEND THAT PURCHASERS BEFORE USING ANY PRODUCT MAKE THEIR OWN TESTS TO VERIFY THIS DATA UNDER THEIR OWN OPERATING CONDITIONS AND TO DETERMINE TO THEIR OWN SATISFACTION WHETHER THE PRODUCT IS SUITABLE FOR THEIR PARTICULAR PURPOSES. THE PRODUCT(S) DISCUSSED HEREIN ARE SOLD WITHOUT ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED.

# MATERIAL SAFETY DATA SHEET

## 1. PRODUCT IDENTIFICATION

TRADE NAME: Ablebond 724-14C

CHEMICAL NAMES: Polyurethane

MANUFACTURER'S NAME: ABLESTIK LABORATORIES

ADDRESS: 833 West 182nd Street, Gardena, CA 90248 (213) 532-9341

REVISION DATE: 11/30/88

## II HAZARDOUS INGREDIENTS

### CHEMICAL NAMES

### CAS NUMBERS

### PERCENT

### EXPOSURE LIMIT

#### ACGIH(TWA)

#### OSHA(PEL)

Toluene diisocyanate

584-84-9

< 0.3

0.005ppm

0.02ppm

TDI is a NTP anticipated human carcinogen. TDI was found to be carcinogenic in mice and rats by gavage in corn oil. Six hours daily of inhalation exposure to rats and mice of 0.05 and 0.15 ppm of TDI for 2 years did not produce an increase tumor incidence. Based on the usual route of TDI exposure, i.e. inhalation, the carcinogenic potential of TDI to human has not yet been determined.

## III PHYSICAL PROPERTIES

VAPOR DENSITY (AIR=1): Not available

MELTING POINT(°F): Not applicable

SPECIFIC GRAVITY: 1.1

BOILING POINT (°F): Not available

SOLUBILITY IN WATER: Reacts with water

PERCENT VOLATILE BY VOLUME: Not determined

VAPOR PRESSURE, mm Hg at 20°C: Not determined

EVAPORATION RATE ( ETHER =1): Slower than ether

APPEARANCE AND ODOR: Cloudy liquid; pungent odor

## IV FIRE AND EXPLOSION

FLASH POINT, °F (GIVE METHOD): 350° (CC)

AUTOIGNITION TEMPERATURE: Not determined

FLAMMABLE LIMITS IN AIR, VOLUME %: LOWER Not determined UPPER Not determined

FIRE EXTINGUISHING MATERIALS: Dry chemical, water spray.

FIRE EXTINGUISHING PROCEDURES: Wear self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Protect against inhalation of cyanate vapors and other decomposition/combustion products.

## V HEALTH HAZARD INFORMATION

### SYMPTOMS OF OVEREXPOSURE FOR EACH POTENTIAL ROUTE OF EXPOSURE

INHALED: Repeated inhalation of minimal amounts of vapor can cause respiratory sensitization and asthma.

CONTACT WITH SKIN: Will cause irritation. Repeated, minimal contact may cause dermatitis, sensitization.

CONTACT WITH EYES: Exposure to vapor can cause irritation to eyes.

ABSORBED THROUGH SKIN: Absorption through skin may be harmful.

SWALLOWED: Oral LD50(rats) for TDI : 5,800 mg/kg

### HEALTH EFFECTS OR RISKS FROM EXPOSURE:

ACUTE: See symptoms of overexposure, section V.

CHRONIC: Toluene diisocyanate is considered to be carcinogenic by NTP. See Section II.

### FIRST AID: EMERGENCY PROCEDURE

EYE CONTACT: Flush with water for at least 15 minutes. Seek medical attention.

SKIN CONTACT: Wash immediately with soap and water. If irritation persists, seek medical attention immediately

INHALED: Remove to fresh air immediately.

INGESTION: Seek medical attention immediately and show the insert card.

SUSPECTED CANCER AGENT? Toluene diisocyanate is considered to be carcinogenic by NTP.

## VI REACTIVITY DATA

STABILITY: ☒ STABLE ☐ UNSTABLE

CONDITIONS TO AVOID: Heat prior to cure.

INCOMPATIBILITY (MATERIALS TO AVOID): Moisture, strong oxidizing agents

HAZARDOUS DECOMPOSITION PRODUCTS (INCLUDING COMBUSTION PRODUCTS):

Substituted anilines, carbon monoxide, and oxides of nitrogen.

HAZARDOUS POLYMERIZATION: ☐ MAY OCCUR ☒ WILL NOT OCCUR

CONDITIONS TO AVOID: None known

## VII SPILL, LEAK AND DISPOSAL

SPILL RESPONSE PROCEDURES: Wipe up with solvent saturated toweling and collect in an appropriate container for disposal.

PREPARING WASTES FOR DISPOSAL: Dispose in approved chemical disposal area or in a manner which complies with all local, state and federal regulations.

## VIII SPECIAL HANDLING INFORMATION

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation. Local exhaust is recommended when appropriate to control employees' exposure.

RESPIRATORY PROTECTION: Contaminant levels will vary dependent on the operation. Use NIOSH approved organic vapor respirator as needed.

EYE PROTECTION: Safety goggles with side shields.

GLOVES: Rubber

OTHER CLOTHING AND EQUIPMENT: Protective equipment to cover exposed areas.

WORK PRACTICES, HYGIENIC PRACTICES: Vent curing oven to outdoors.

OTHER HANDLING AND STORAGE REQUIREMENTS: Store frozen at all times.

PROTECTIVE MEASURES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT:

Avoid contact with skin, eyes and clothing. Good housekeeping is required. Avoid inhalation of vapors.

## IX REGULATORY INFORMATION

SARA/TITLE III - TOXIC CHEMICALS LIST:

This product contains chemicals subject to the reporting requirements of section 313 of Title III of Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

< 0.3

584-84-9

Toluene diisocyanate

TSCA INVENTORY STATUS:

Chemical components listed on TSCA Inventory

CALIFORNIA PROPOSITION 65:

This product does not contain toxic chemicals currently on the California List of known carcinogens and reproductive toxins.

**DISCLAIMER:** THE INFORMATION GIVEN AND THE RECOMMENDATIONS MADE HEREIN APPLY TO OUR PRODUCT(S) ALONE AND NOT IN COMBINATION WITH ANY OTHER PRODUCT(S). SUCH INFORMATION AND RECOMMENDATIONS ARE BASED ON OUR RESEARCH AND ON DATA FROM OTHER RELIABLE SOURCES AND ARE BELIEVED TO BE ACCURATE BUT NO GUARANTEE OF THEIR ACCURACY IS MADE. IN EVERY CASE WE URGE AND RECOMMEND THAT PURCHASERS BEFORE USING ANY PRODUCT MAKE THEIR OWN TESTS TO VERIFY THIS DATA UNDER THEIR OWN OPERATING CONDITIONS AND TO DETERMINE TO THEIR OWN SATISFACTION WHETHER THE PRODUCT IS SUITABLE FOR THEIR PARTICULAR PURPOSES. THE PRODUCT(S) DISCUSSED HEREIN ARE SOLD WITHOUT ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED.

# **MATERIAL SAFETY DATA SHEET**

## **1. PRODUCT IDENTIFICATION**

TRADE NAME: Ablebond 724-14C with Glass Beads

CHEMICAL NAMES: Polyurethane

MANUFACTURER'S NAME: ABLESTIK LABORATORIES

ADDRESS: 833 West 182nd Street, Gardena, CA 90248 (213) 532-9341

PREPARATION DATE: 03/03/89

## **II HAZARDOUS INGREDIENTS**

<u>CHEMICAL NAMES</u>	<u>CAS NUMBERS</u>	<u>PERCENT</u>	<u>EXPOSURE LIMIT</u>	
			<u>ACGIH(TWA)</u>	<u>OSHA(PEL)</u>
Toluene diisocyanate	584-84-9	< 0.3	0.005ppm	0.02ppm

TDI is a NTP anticipated human carcinogen. TDI was found to be carcinogenic in mice and rats by gavage in corn oil.

Six hours daily of inhalation exposure to rats and mice of 0.05 and 0.15 ppm of TDI for 2 years did not produce an increase tumor incidence. Based on the usual route of TDI exposure, i.e. inhalation, the carcinogenic potential of TDI to human has not yet been determined.

## **III PHYSICAL PROPERTIES**

VAPOR DENSITY (AIR=1): Not available

MELTING POINT(°F): Not applicable

SPECIFIC GRAVITY: 1.2

BOILING POINT (°F): Not available

SOLUBILITY IN WATER: Reacts with water

PERCENT VOLATILE BY VOLUME: Not determined

VAPOR PRESSURE, mm Hg at 20°C: Not determined

EVAPORATION RATE ( ETHER =1): Slower than ether

APPEARANCE AND ODOR: Cloudy paste; pungent odor

## **IV FIRE AND EXPLOSION**

FLASH POINT, °F (GIVE METHOD): 350° (CC)

AUTOIGNITION TEMPERATURE: Not determined

FLAMMABLE LIMITS IN AIR, VOLUME %: LOWER Not determined UPPER Not determined

FIRE EXTINGUISHING MATERIALS: Dry chemical, water spray.

FIRE EXTINGUISHING PROCEDURES: Wear self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Protect against inhalation of cyanate vapors and other decomposition/combustion products.

## **V HEALTH HAZARD INFORMATION**

### **SYMPTOMS OF OVEREXPOSURE FOR EACH POTENTIAL ROUTE OF EXPOSURE**

INHALED: Repeated inhalation of minimal amounts of vapor can cause respiratory sensitization and asthma.

CONTACT WITH SKIN: Will cause irritation. Repeated , minimal contact may cause dermatitis, sensitization.

CONTACT WITH EYES: Exposure to vapor can cause irritation to eyes.

ABSORBED THROUGH SKIN: Absorption through skin may be harmful.

SWALLOWED: Oral LD50(rats) for TDI : 5,800 mg/kg

### **HEALTH EFFECTS OR RISKS FROM EXPOSURE:**

ACUTE: See symptoms of overexposure, section V.

CHRONIC: Toluene diisocyanate is considered to be carcinogenic by NTP. See Section II.

### **FIRST AID: EMERGENCY PROCEDURE**

EYE CONTACT: Flush with water for at least 15 minutes. Seek medical attention.

SKIN CONTACT: Wash immediately with soap and water. If irritation persists, seek medical attention immediately

INHALED: Remove to fresh air immediately.

INGESTION: Seek medical attention immediately and show the insert card.

**SUSPECTED CANCER AGENT?** Toluene diisocyanate is considered to be carcinogenic by NTP.

## VI REACTIVITY DATA

STABILITY: ☒ STABLE ☐ UNSTABLE

CONDITIONS TO AVOID: Heat prior to cure.

INCOMPATIBILITY (MATERIALS TO AVOID): Moisture, strong oxidizing agents

HAZARDOUS DECOMPOSITION PRODUCTS (INCLUDING COMBUSTION PRODUCTS):

Substituted anilines, carbon monoxide, and oxides of nitrogen.

HAZARDOUS POLYMERIZATION: ☐ MAY OCCUR ☒ WILL NOT OCCUR

CONDITIONS TO AVOID: None known

## VII SPILL, LEAK AND DISPOSAL

SPILL RESPONSE PROCEDURES: Wipe up with solvent saturated toweling and collect in an appropriate container for disposal.

PREPARING WASTES FOR DISPOSAL: Dispose in approved chemical disposal area or in a manner which complies with all local, state and federal regulations.

## VIII SPECIAL HANDLING INFORMATION

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation. Local exhaust is recommended when appropriate to control employees' exposure.

RESPIRATORY PROTECTION: Contaminant levels will vary dependent on the operation. Use NIOSH approved organic vapor respirator as needed.

EYE PROTECTION: Safety goggles with side shields.

GLOVES: Rubber

OTHER CLOTHING AND EQUIPMENT: Protective equipment to cover exposed areas.

WORK PRACTICES, HYGIENIC PRACTICES: Vent curing oven to outdoors.

OTHER HANDLING AND STORAGE REQUIREMENTS: Store frozen at all times.

PROTECTIVE MEASURES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT:

Avoid contact with skin, eyes and clothing. Good housekeeping is required. Avoid inhalation of vapors.

## IX REGULATORY INFORMATION

SARA/TITLE III - TOXIC CHEMICALS LIST:

This product contains chemicals subject to the reporting requirements of section 313 of Title III of Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

< 0.3

584-84-9

Toluene diisocyanate

TSCA INVENTORY STATUS:

Chemical components listed on TSCA Inventory

CALIFORNIA PROPOSITION 65:

This product does not contain toxic chemicals currently on the California List of known carcinogens and reproductive toxins.

**DISCLAIMER:** THE INFORMATION GIVEN AND THE RECOMMENDATIONS MADE HEREIN APPLY TO OUR PRODUCT(S) ALONE AND NOT IN COMBINATION WITH ANY OTHER PRODUCT(S). SUCH INFORMATION AND RECOMMENDATIONS ARE BASED ON OUR RESEARCH AND ON DATA FROM OTHER RELIABLE SOURCES AND ARE BELIEVED TO BE ACCURATE BUT NO GUARANTEE OF THEIR ACCURACY IS MADE. IN EVERY CASE WE URGE AND RECOMMEND THAT PURCHASERS BEFORE USING ANY PRODUCT MAKE THEIR OWN TESTS TO VERIFY THIS DATA UNDER THEIR OWN OPERATING CONDITIONS AND TO DETERMINE TO THEIR OWN SATISFACTION WHETHER THE PRODUCT IS SUITABLE FOR THEIR PARTICULAR PURPOSES. THE PRODUCT(S) DISCUSSED HEREIN ARE SOLD WITHOUT ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED.

# MATERIAL SAFETY DATA SHEET

## 1. PRODUCT IDENTIFICATION

TRADE NAME: Ablebond 724-17 Green  
CHEMICAL NAMES: Polyurethane  
MANUFACTURER'S NAME: ABLESTIK LABORATORIES  
ADDRESS: 833 West 182nd Street, Gardena, CA 90248 (213) 532-9341  
REVISION DATE: 01/25/89

## II HAZARDOUS INGREDIENTS

<u>CHEMICAL NAMES</u>	<u>CAS NUMBERS</u>	<u>PERCENT</u>	<u>EXPOSURE LIMIT</u>	
			<u>ACGIH(TWA)</u>	<u>OSHA(PEL)</u>
Toluene diisocyanate	584-84-9	< 0.3	0.005ppm	0.02ppm

TDI is a NTP anticipated human carcinogen. TDI was found to be carcinogenic in mice and rats by gavage in corn oil. Six hours daily of inhalation exposure to rats and mice of 0.05 and 0.15 ppm of TDI for 2 years did not produce an increase tumor incidence. Based on the usual route of TDI exposure, i.e. inhalation, the carcinogenic potential of TDI to human has not yet been determined.

## III PHYSICAL PROPERTIES

VAPOR DENSITY (AIR=1): Not available	MELTING POINT(°F): Not applicable
SPECIFIC GRAVITY: 1.1	BOILING POINT (°F): Not available
SOLUBILITY IN WATER: Reacts with water.	PERCENT VOLATILE BY VOLUME: Not determined
VAPOR PRESSURE, mm Hg at 20°C: Not determined	
EVAPORATION RATE ( ETHER =1): Slower than ether	
APPEARANCE AND ODOR: Green liquid; pungent odor	

## IV FIRE AND EXPLOSION

FLASH POINT, °F (GIVE METHOD): 350° (CC)  
AUTOIGNITION TEMPERATURE: Not determined  
FLAMMABLE LIMITS IN AIR, VOLUME %: LOWER Not determined UPPER Not determined  
FIRE EXTINGUISHING MATERIALS: Dry chemical, water spray.  
FIRE EXTINGUISHING PROCEDURES: Wear self-contained breathing apparatus.  
UNUSUAL FIRE AND EXPLOSION HAZARDS: Protect against inhalation of cyanate vapors and other decomposition/combustion products.

## V HEALTH HAZARD INFORMATION

### SYMPTOMS OF OVEREXPOSURE FOR EACH POTENTIAL ROUTE OF EXPOSURE

INHALED: Repeated inhalation of minimal amounts of vapor can cause respiratory sensitization and asthma.  
CONTACT WITH SKIN: Will cause irritation. Repeated , minimal contact may cause dermatitis, sensitization.  
CONTACT WITH EYES: Exposure to vapor can cause irritation to eyes.  
ABSORBED THROUGH SKIN: Absorption through skin may be harmful.  
SWALLOWED: Oral LD50(rats) for TDI : 5,800 mg/kg

### HEALTH EFFECTS OR RISKS FROM EXPOSURE:

ACUTE: See symptoms of overexposure, section V.  
CHRONIC: Toluene diisocyanate is considered to be carcinogenic by NTP. See Section II.

### FIRST AID: EMERGENCY PROCEDURE

EYE CONTACT: Flush with water for at least 15 minutes. Seek medical attention.  
SKIN CONTACT: Wash immediately with soap and water. If irritation persists, seek medical attention immediately  
INHALED: Remove to fresh air immediately.  
INGESTION: Seek medical attention immediately and show the insert card.

SUSPECTED CANCER AGENT? Toluene diisocyanate is considered to be carcinogenic by NTP.

## VI REACTIVITY DATA

STABILITY: ☒ STABLE ☐ UNSTABLE

CONDITIONS TO AVOID: Heat prior to cure.

INCOMPATIBILITY (MATERIALS TO AVOID): Moisture, strong oxidizing agents

HAZARDOUS DECOMPOSITION PRODUCTS (INCLUDING COMBUSTION PRODUCTS):

Substituted anilines, carbon monoxide, and oxides of nitrogen.

HAZARDOUS POLYMERIZATION: ☐ MAY OCCUR ☒ WILL NOT OCCUR

CONDITIONS TO AVOID: None known

## VII SPILL, LEAK AND DISPOSAL

SPILL RESPONSE PROCEDURES: Wipe up with solvent saturated toweling and collect in an appropriate container for disposal.

PREPARING WASTES FOR DISPOSAL: Dispose in approved chemical disposal area or in a manner which complies with all local, state and federal regulations.

## VIII SPECIAL HANDLING INFORMATION

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation. Local exhaust is recommended when appropriate to control employees' exposure.

RESPIRATORY PROTECTION: Contaminant levels will vary dependent on the operation. Use NIOSH approved organic vapor respirator as needed.

EYE PROTECTION: Safety goggles with side shields.

GLOVES: Rubber

OTHER CLOTHING AND EQUIPMENT: Protective equipment to cover exposed areas.

WORK PRACTICES, HYGIENIC PRACTICES: Vent curing oven to outdoors.

OTHER HANDLING AND STORAGE REQUIREMENTS: Store frozen at all times.

PROTECTIVE MEASURES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT:

Avoid contact with skin, eyes and clothing. Good housekeeping is required. Avoid inhalation of vapors.

## IX REGULATORY INFORMATION

SARA/TITLE III - TOXIC CHEMICALS LIST:

This product contains chemicals subject to the reporting requirements of section 313 of Title III of Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

< 0.3

584-84-9

Toluene diisocyanate

TSCA INVENTORY STATUS:

Chemical components listed on TSCA Inventory

CALIFORNIA PROPOSITION 65:

This product does not contain toxic chemicals currently on the California List of known carcinogens and reproductive toxins.

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# **MATERIAL SAFETY DATA SHEET**

## **1. PRODUCT IDENTIFICATION**

TRADE NAME: Ablebond 724-14C BLACK

CHEMICAL NAMES: Polyurethane

MANUFACTURER'S NAME: ABLESTIK LABORATORIES

ADDRESS: 833 West 182nd Street, Gardena, CA 90248 (213) 532-9341

REVISION DATE: 01/11/89

## **II HAZARDOUS INGREDIENTS**

<u>CHEMICAL NAMES</u>	<u>CAS NUMBERS</u>	<u>PERCENT</u>	<u>EXPOSURE LIMIT</u>	
			<u>ACGIH(TWA)</u>	<u>OSHA(PEL)</u>
Toluene diisocyanate	584-84-9	< 0.3	0.005ppm	0.02ppm

TDI is a NTP anticipated human carcinogen. TDI was found to be carcinogenic in mice and rats by gavage in corn oil. Six hours daily of inhalation exposure to rats and mice of 0.05 and 0.15 ppm of TDI for 2 years did not produce an increase tumor incidence. Based on the usual route of TDI exposure, i.e. inhalation, the carcinogenic potential of TDI to human has not yet been determined.

## **III PHYSICAL PROPERTIES**

VAPOR DENSITY (AIR=1): Not available

MELTING POINT(°F): Not applicable

SPECIFIC GRAVITY: 1.1

BOILING POINT (°F): Not available

SOLUBILITY IN WATER: Reacts with water

PERCENT VOLATILE BY VOLUME: Not determined

VAPOR PRESSURE, mm Hg at 20°C: Not determined

EVAPORATION RATE ( ETHER =1): Slower than ether

APPEARANCE AND ODOR: Black liquid; pungent odor

## **IV FIRE AND EXPLOSION**

FLASH POINT, °F (GIVE METHOD): 350° (CC)

AUTOIGNITION TEMPERATURE: Not determined

FLAMMABLE LIMITS IN AIR, VOLUME %: LOWER Not determined UPPER Not determined

FIRE EXTINGUISHING MATERIALS: Dry chemical, water spray.

FIRE EXTINGUISHING PROCEDURES: Wear self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Protect against inhalation of cyanate vapors and other decomposition/combustion products.

## **V HEALTH HAZARD INFORMATION**

### **SYMPTOMS OF OVEREXPOSURE FOR EACH POTENTIAL ROUTE OF EXPOSURE**

INHALED: Repeated inhalation of minimal amounts of vapor can cause respiratory sensitization and asthma.

CONTACT WITH SKIN: Will cause irritation. Repeated, minimal contact may cause dermatitis, sensitization.

CONTACT WITH EYES: Exposure to vapor can cause irritation to eyes.

ABSORBED THROUGH SKIN: Absorption through skin may be harmful.

SWALLOWED: Oral LD50(rats) for TDI : 5,800 mg/kg

### **HEALTH EFFECTS OR RISKS FROM EXPOSURE:**

ACUTE: See symptoms of overexposure, section V.

CHRONIC: Toluene diisocyanate is considered to be carcinogenic by NTP. See Section II.

### **FIRST AID: EMERGENCY PROCEDURE**

EYE CONTACT: Flush with water for at least 15 minutes. Seek medical attention.

SKIN CONTACT: Wash immediately with soap and water. If irritation persists, seek medical attention immediately

INHALED: Remove to fresh air immediately.

INGESTION: Seek medical attention immediately and show the insert card.

**SUSPECTED CANCER AGENT?** Toluene diisocyanate is considered to be carcinogenic by NTP.

## VI REACTIVITY DATA

STABILITY: ☒ STABLE ☐ UNSTABLE

CONDITIONS TO AVOID: Heat prior to cure.

INCOMPATIBILITY (MATERIALS TO AVOID): Moisture, strong oxidizing agents

HAZARDOUS DECOMPOSITION PRODUCTS (INCLUDING COMBUSTION PRODUCTS):

Substituted anilines, carbon monoxide, and oxides of nitrogen.

HAZARDOUS POLYMERIZATION: ☐ MAY OCCUR ☒ WILL NOT OCCUR

CONDITIONS TO AVOID: None known

## VII SPILL, LEAK AND DISPOSAL

SPILL RESPONSE PROCEDURES: Wipe up with solvent saturated toweling and collect in an appropriate container for disposal.

PREPARING WASTES FOR DISPOSAL: Dispose in approved chemical disposal area or in a manner which complies with all local, state and federal regulations.

## VIII SPECIAL HANDLING INFORMATION

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation. Local exhaust is recommended when appropriate to control employees' exposure.

RESPIRATORY PROTECTION: Contaminant levels will vary dependent on the operation. Use NIOSH approved organic vapor respirator as needed.

EYE PROTECTION: Safety goggles with side shields.

GLOVES: Rubber

OTHER CLOTHING AND EQUIPMENT: Protective equipment to cover exposed areas.

WORK PRACTICES, HYGIENIC PRACTICES: Vent curing oven to outdoors.

OTHER HANDLING AND STORAGE REQUIREMENTS: Store frozen at all times.

PROTECTIVE MEASURES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT:

Avoid contact with skin, eyes and clothing. Good housekeeping is required. Avoid inhalation of vapors.

## IX REGULATORY INFORMATION

SARA/TITLE III - TOXIC CHEMICALS LIST:

This product contains chemicals subject to the reporting requirements of section 313 of Title III of Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

< 0.3%

584-84-9

Toluene diisocyanate

TSCA INVENTORY STATUS:

Chemical components listed on TSCA Inventory

CALIFORNIA PROPOSITION 65:

This product does not contain toxic chemicals currently on the California List of known carcinogens and reproductive toxins.

**DISCLAIMER:** THE INFORMATION GIVEN AND THE RECOMMENDATIONS MADE HEREIN APPLY TO OUR PRODUCT(S) ALONE AND NOT IN COMBINATION WITH ANY OTHER PRODUCT(S). SUCH INFORMATION AND RECOMMENDATIONS ARE BASED ON OUR RESEARCH AND ON DATA FROM OTHER RELIABLE SOURCES AND ARE BELIEVED TO BE ACCURATE BUT NO GUARANTEE OF THEIR ACCURACY IS MADE. IN EVERY CASE WE URGE AND RECOMMEND THAT PURCHASERS BEFORE USING ANY PRODUCT MAKE THEIR OWN TESTS TO VERIFY THIS DATA UNDER THEIR OWN OPERATING CONDITIONS AND TO DETERMINE TO THEIR OWN SATISFACTION WHETHER THE PRODUCT IS SUITABLE FOR THEIR PARTICULAR PURPOSES. THE PRODUCT(S) DISCUSSED HEREIN ARE SOLD WITHOUT ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED.

# **MATERIAL SAFETY DATA SHEET**

## **1. PRODUCT IDENTIFICATION**

TRADE NAME: Ablebond 724-1 Black

CHEMICAL NAMES: Polyurethane

MANUFACTURER'S NAME: ABLESTIK LABORATORIES

ADDRESS: 833 West 182nd Street, Gardena, CA 90248 (213) 532-9341

REVISION DATE: 12/07/88

## **II HAZARDOUS INGREDIENTS**

<u>CHEMICAL NAMES</u>	<u>CAS NUMBERS</u>	<u>PERCENT</u>	<u>EXPOSURE LIMIT</u>	
			<u>ACGIH(TWA)</u>	<u>OSHA(PEL)</u>
Toluene diisocyanate	584-84-9	< 0.3	0.005ppm	0.02ppm

TDI is a NTP anticipated human carcinogen. TDI was found to be carcinogenic in mice and rats by gavage in corn oil. Six hours daily of inhalation exposure to rats and mice of 0.05 and 0.15 ppm of TDI for 2 years did not produce an increase tumor incidence. Based on the usual route of TDI exposure, i.e. inhalation, the carcinogenic potential of TDI to human has not yet been determined.

## **III PHYSICAL PROPERTIES**

VAPOR DENSITY (AIR=1): Not available

MELTING POINT(°F): Not applicable

SPECIFIC GRAVITY: 1.1

BOILING POINT (°F): Not available

SOLUBILITY IN WATER: Reacts with water

PERCENT VOLATILE BY VOLUME: Not determined

VAPOR PRESSURE, mm Hg at 20°C: Not determined

EVAPORATION RATE ( ETHER =1): Slower than ether

APPEARANCE AND ODOR: Black liquid; pungent odor

## **IV FIRE AND EXPLOSION**

FLASH POINT, °F (GIVE METHOD): 350° (CC)

AUTOIGNITION TEMPERATURE: Not determined

FLAMMABLE LIMITS IN AIR, VOLUME %: LOWER Not determined UPPER Not determined

FIRE EXTINGUISHING MATERIALS: Dry chemical, water spray.

FIRE EXTINGUISHING PROCEDURES: Wear self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Protect against inhalation of cyanate vapors and other decomposition/combustion products.

## **V HEALTH HAZARD INFORMATION**

### **SYMPTOMS OF OVEREXPOSURE FOR EACH POTENTIAL ROUTE OF EXPOSURE**

INHALED: Repeated inhalation of minimal amounts of vapor can cause respiratory sensitization and asthma.

CONTACT WITH SKIN: Will cause irritation. Repeated , minimal contact may cause dermatitis, sensitization.

CONTACT WITH EYES: Exposure to vapor can cause irritation to eyes.

ABSORBED THROUGH SKIN: Absorption through skin may be harmful.

SWALLOWED: Oral LD50(rats) for TDI : 5,800 mg/kg

### **HEALTH EFFECTS OR RISKS FROM EXPOSURE:**

ACUTE: See symptoms of overexposure, section V.

CHRONIC: Toluene diisocyanate is considered to be carcinogenic by NTP. See Section II.

### **FIRST AID: EMERGENCY PROCEDURE**

EYE CONTACT: Flush with water for at least 15 minutes. Seek medical attention.

SKIN CONTACT: Wash immediately with soap and water. If irritation persists, seek medical attention immediately

INHALED: Remove to fresh air immediately.

INGESTION: Seek medical attention immediately and show the insert card.

**SUSPECTED CANCER AGENT?** Toluene diisocyanate is considered to be carcinogenic by NTP.

## VI REACTIVITY DATA

STABILITY:   X   STABLE        UNSTABLE

CONDITIONS TO AVOID: Heat prior to cure.

INCOMPATIBILITY (MATERIALS TO AVOID): Moisture, strong oxidizing agents

HAZARDOUS DECOMPOSITION PRODUCTS (INCLUDING COMBUSTION PRODUCTS):

Substituted anilines, carbon monoxide, and oxides of nitrogen.

HAZARDOUS POLYMERIZATION:        MAY OCCUR   X   WILL NOT OCCUR

CONDITIONS TO AVOID: None known

## VII SPILL, LEAK AND DISPOSAL

SPILL RESPONSE PROCEDURES: Wipe up with solvent saturated toweling and collect in an appropriate container for disposal.

PREPARING WASTES FOR DISPOSAL: Dispose in approved chemical disposal area or in a manner which complies with all local, state and federal regulations.

## VIII SPECIAL HANDLING INFORMATION

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation. Local exhaust is recommended when appropriate to control employees' exposure.

RESPIRATORY PROTECTION: The use of a NIOSH approved mask for toxic dust is required if cured product is to be dry sanded or ground.

EYE PROTECTION: Safety goggles with side shields.

GLOVES: Rubber

OTHER CLOTHING AND EQUIPMENT: Protective equipment to cover exposed areas.

WORK PRACTICES, HYGIENIC PRACTICES: Vent curing oven to outdoors.

OTHER HANDLING AND STORAGE REQUIREMENTS: Store frozen at all times.

PROTECTIVE MEASURES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT:

Avoid contact with skin, eyes and clothing. Good housekeeping is required. Avoid inhalation of vapors.

## IX REGULATORY INFORMATION

SARA/TITLE III - TOXIC CHEMICALS LIST:

This product contains chemicals subject to the reporting requirements of section 313 of Title III of Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

< 0.3

584-84-9

Toluene diisocyanate

TSCA INVENTORY STATUS:

Chemical components listed on TSCA Inventory

CALIFORNIA PROPOSITION 65:

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